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BRITISH GEOGRAPHY

BY W. HUGHES

WITH MAPS

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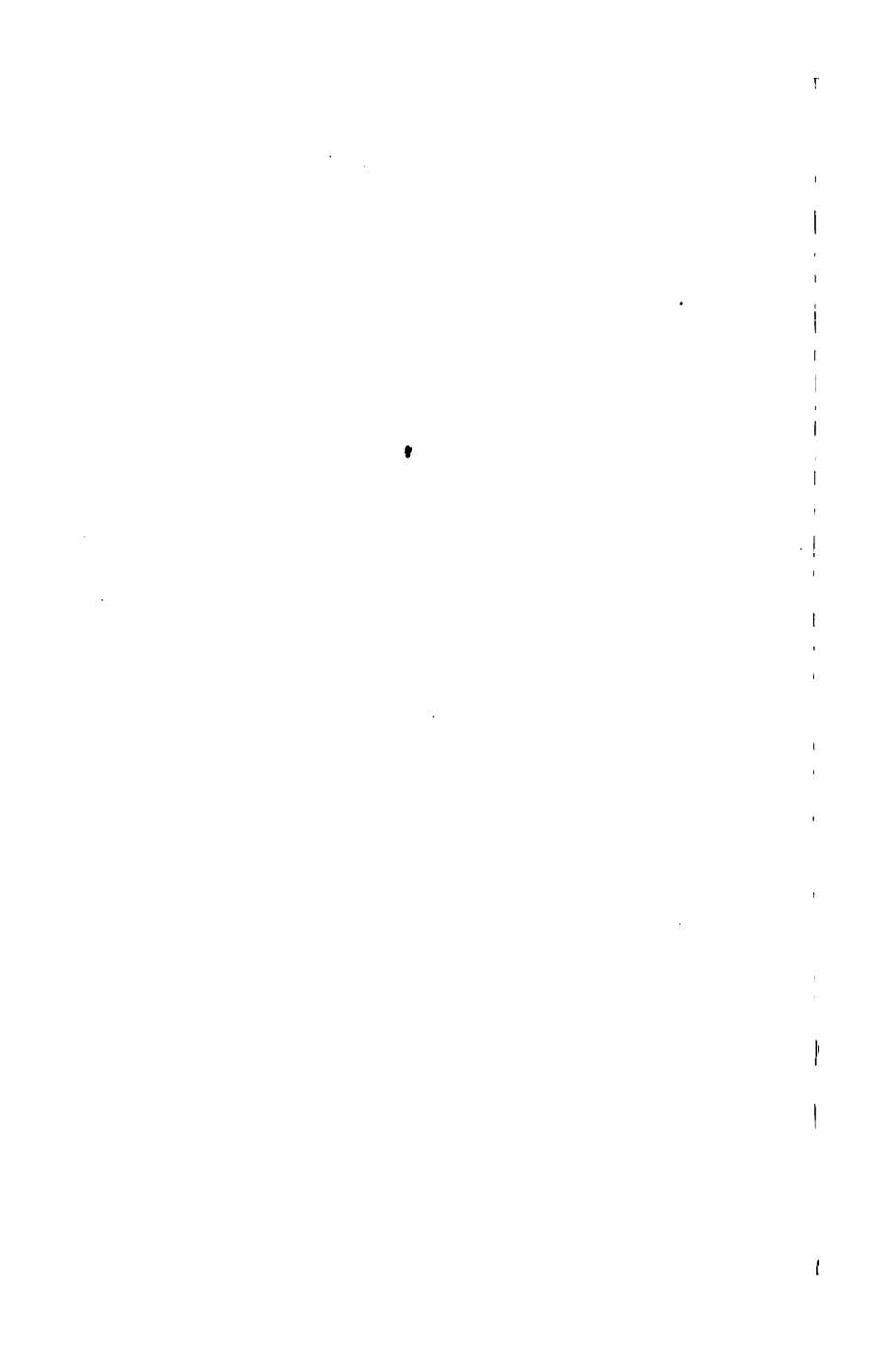
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EMBRACING THE
PHYSICAL, INDUSTRIAL, AND DESCRIPTIVE GEOGRAPHY
OF
ENGLAND AND WALES,
SCOTLAND, AND IRELAND.

FOR THE USE OF SCHOOLS AND COLLEGES.

BY
WILLIAM HUGHES, F.R.G.S.,
Late Lecturer on Geography at the Training Institution, Battersea,
and Professor of Geography in the College for Civil Engineers;
Author of 'The Construction of Maps,' &c., &c.

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P R E F A C E.

AT a time when the value and necessity of geographical studies are universally admitted, it would be superfluous to enter into any argument in favour of the superior importance of a correct knowledge of the geography of our own country. The improved means possessed by schools at the present day, in the use of the numerous Maps and other works illustrative of physical geography which have recently appeared, together with the general interest attaching to the entire subject, seem to render this a favourable time to furnish those engaged in education with a clear digest of British Geography, based upon the natural features and productions of our islands, and the influence which these have exerted upon the development of industry among their inhabitants.

The views entertained by the writer upon the subject of geographical tuition have been already placed before the public,* and the present volume is an attempt (within the limited sphere to which it extends) to carry them into practice. In accordance with these, it is regarded as an object of primary importance to give the learner correct ideas of the *position, magnitude, form, surface, climate, and natural productions* of the countries which it is intended to describe,

* 'Remarks upon Geography as a Branch of Popular Education,' &c. London, 1847.

since it is these circumstances which have guided the exercise of man's industrial powers, and in a great measure compelled their direction into particular channels. When, by the aid of constant reference to maps (and, if possible, by the additional practice of map-drawing), these facts have become well fixed in the mind, the circumstances of population, the position of manufacturing and commercial emporiums, and the various details of descriptive geography, will be found to follow in an easy and natural order, and to possess an interest which does not otherwise belong to them. It must always be borne in mind that mere *names*—simply as such—are of no use, and that they only possess value when associated with facts or circumstances which render them deserving of being committed to memory. Among the most interesting and attractive of such particulars are the historical events with which they may have been connected, the eminent men to whom they may have given birth, the striking features of natural scenery which they may represent, the various productions of the physical world for which they may be celebrated, or the achievements of human skill and industry of which they may constitute the evidence. In a less striking degree, the relative position of mountains and valleys, of moorlands or marshes,—the situation of towns on the banks or at the mouths of rivers,—the proximity to salient points of coast,—with numerous other circumstances,—present additional facts, of which the judicious teacher of geography will avail himself in imparting interest to his subject, which (instead of being a dull routine of exercise for the memory) will thus be raised to the dignity of a science, and invested with a correspondent degree of attraction.

In the present volume, the writer has endeavoured to present the information which it contains in a more generally attractive form than such works usually assume. While *school* Geography consist principally of lists of

names, arranged in a dull and monotonous succession of alphabetical or other tables, so long will the subject of which they treat be regarded as dry and uninviting, and its pursuit be felt by the youthful learner as a task unprofitable in its attainment as it is often unattractive in appearance. In the arrangement of this 'Manual' the writer has had regard to its use as a *reading-book* not less than as a geographical class-book, and trusts that it will be found not devoid of the characteristics required for such a purpose. The desire to accomplish this will perhaps be held to justify the occasional omission of subordinate details which might have given greater completeness to some of the topics which the work embraces. But while not unconscious of such imperfections, he is yet sanguine enough to hope that it will be found calculated to render assistance in the cause of education, and believes that the most experienced teachers will coincide with him in saying that it is better to fix attention upon the leading features of any branch of study, and to teach these *thoroughly*,—than to run the risk of destroying the general interest of the subject, and a perception of the mutual coherence of its parts, by fatiguing the mind with a multiplicity of minute and comparatively unimportant details upon any of its lesser subdivisions. The consideration of *how much of any subject* it is likely that (in the great majority of cases) the time and opportunity afforded for the purpose *will admit of being taught* is a matter of the most practical importance to the school-master, and one by which the task of preparing the present work has been largely guided.

Islington,
January 15th, 1851.

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In the *Physical Map of the British Islands*, the shaded blue tint represents the water, and the rivers are indicated by narrow blue lines. The darker shade of colour over the land represents the plains and valleys, and the portions left white are the upland districts, or table-lands,—the comparative depth of tint being proportionate to the elevation of the land, and showing its gradual rise.

MANUAL OF BRITISH GEOGRAPHY.

(1.) THE British Islands form an extensive archipelago, situated in the Atlantic Ocean, westward of the continent of Europe, to which division of the globe they belong. They consist of two large islands—called respectively *Great Britain*, and *Ireland*,—and of several smaller adjacent groups and detached islands. The principal of these are the Orkney Islands, the Shetland Islands, the Hebrides, the Isle of Man, the Isle of Anglesey, the Scilly Islands, and the Isle of Wight, —the relative positions of which are best learnt by careful study of the map.

The Shetland Islands form the most northerly portion of the archipelago, and their extreme northern point (on the island of Unst) is in $60^{\circ} 49'$ N. latitude. The most southward of the Scilly Islands, at the opposite extremity of the archipelago, is in N. lat. $49^{\circ} 53'$. The entire extent of the group from north to south is therefore $10^{\circ} 56'$ of latitude, equivalent to 656 geographical, or 756 English miles.

The most eastern point of the British archipelago (Lowestoft Ness, on the east coast of England) is in $1^{\circ} 46'$ longitude east of Greenwich. The little group of islets called the Blaskets (off the west coast of Ireland, near the promontory called Dunmore Head) are in $10^{\circ} 36'$ W. longitude. From east to west the archipelago extends therefore over $12^{\circ} 22'$, equal (on the line of the 52nd parallel) to 458 geographical, or 527 English miles, and correspondent to 49 minutes, 27 seconds, of time.

Great Britain is the largest of the European islands, and Ireland the second in magnitude. The former—Great Britain—embraces three portions, called respectively *England*, *Scot-*

land, and *Wales*. The northern part of the island forms Scotland:—Wales occupies a portion of its western side:—the remaining and larger portion belongs to England. The whole island is long and narrow in shape, and decreases in breadth from the south towards its northern extremity.

The entire area of Great Britain is 83,826 English square miles. Its northern and western parts (which comprise Scotland and Wales) are generally mountainous, and embrace a succession of high tracts of land stretching along the whole western side of the island:—its central, southern, and eastern parts (which belong to England) are mostly level. In Scotland, the Grampian Mountains attain a height of 4390 feet above the sea-level, and are the highest land in the British Islands;—Scawfell, the loftiest summit in England, is 3166 feet; and Snowdon, in Wales, 3571 feet, above the level of the sea.

Ireland, to the westward of Great Britain, is of squarer and more compact form than that island, though its extent in length is considerably greater than in breadth: its area is 32,513 English square miles. Ireland is mountainous round the coasts, but generally level in the interior; its highest elevations are the Mountains of Kerry, in the south-west part of the island, which reach 3404 feet above the sea-level.

(2.) The seas which surround the British Islands are offsets, or outlying portions, of the Atlantic Ocean. On the east, between Great Britain and the European mainland, is the *North Sea*,—the more southward portion of which, between the opposite coasts of England and Holland, is distinguished as the *German Ocean*. To the south is the *English Channel*, which divides Great Britain from the shores of France, and which is connected with the German Ocean by the Strait of Dover, only 20½ miles across in its narrowest part.

Between Great Britain and Ireland is the *Irish Sea*, which is connected with the open expanse of the Atlantic by two channels; the northern of these bears the name of the *North Channel*, and the southern that of *St. George's Channel*. The western and northern sides of the archipelago are washed by the waters of the Atlantic Ocean.

(3.) Owing to the ameliorating and equalizing influence exercised by the waters of the surrounding seas, the *climate* of the British Islands is milder, and also more humid, than that of portions of the continent in similar latitudes. They have everywhere a higher average of annual temperature, and

also less extremes of heat and cold, than places on the mainland. The western sides, both of Great Britain and Ireland, are warmer than the eastern, and the coldest portions of the entire archipelago are the eastern coasts of England and southern Scotland. The mean seasonal and annual temperatures of London, Edinburgh, and Dublin, are subjoined, and some more detailed particulars are given in subsequent pages (Arts. 45, 82, and 102):

	Mean Temperature of				
	Winter.	Spring.	Summer.	Autumn.	Year.
London (lat. 51° 30') .	39·5	49	63	51·8	50·8
Edinburgh (lat. 55° 27') .	38·4	45	57·1	47·8	47·1
Dublin (lat. 53° 21') .	40·6	48·5	61	50·	50·

(4.) The mineral riches of the British Islands are, in proportion to their extent, superior to those of any other country on the globe. The precious metals, gold and silver, are indeed wanting, or only occur in small and unimportant quantity; but the absence of these is more than compensated by the great abundance of nearly all the more useful productions of the mineral kingdom, including iron, tin, copper, lead, zinc, coal, and salt; besides a variety of others of less importance, as antimony, manganese, plumbago, alum, fullers'-earth, arsenic, &c. The southern half of Scotland, and the northern, central, and western parts of England (including Wales), are the chief localities of mining industry (Art. 43).

Ireland is less rich than Great Britain in mineral produce, but iron ore is abundant in many parts of the island, and there are mines of copper and lead (Art. 101).

The extraordinary value and comparative importance of the mineral productions of the British Islands may be inferred from the estimated fact that England alone furnishes twelve-thirteenths of the whole quantity of *tin* produced in Europe, nearly half the entire quantity of *copper*, one-third of the total supply of *iron*; and the quantity of *coal* annually raised in Great Britain is more than twice as great as the total produce of Belgium, France, and the United States, and probably equal to at least a third part of the entire produce of the globe!

(5.) The vegetable and animal productions of the British Islands are those which belong to the north temperate

in general, and some particulars relative to their distribution are stated in subsequent pages. Wheat is capable of successful cultivation nearly as far north as the 58th parallel, beyond which only the hardier grains, as barley, rye, and oats, come to perfection. In the north of England, the cultivation of wheat extends to the height of 1000 feet above the level of the sea; oats grow at nearly double that elevation. In the northern part of Scotland (Aberdeenshire), wheat does not succeed at a greater height than 400 feet, nor oats beyond 950 feet; but the hardier grain called *bigg* (a kind of barley) often ripens at 100 feet greater elevation.

Among the plants of larger size most widely spread over both England and Scotland, and forming some of the principal components of British vegetation, are the common oak, the elm, the birch, the alder, the hazel-nut, the aspen, the dwarf willow, the common yew, the blackthorn, the blackberry, the common ash, the holly, and the common dog-rose. The birch, alder, poplar, mountain-ash, and Scotch fir, are the principal native woods in Scotland.

The maple, the beech, the Spanish chestnut, the elm, and the common mistletoe, occur chiefly in the southern part of England, and diminish in frequency northward. Every plant which is universally spread over the British Islands is also a native of the central parts of Western Europe.

(6.) The zoology of the British Islands does not now include any of the larger members of the animal kingdom belonging to the carnivorous order of quadrupeds; some which were formerly common, as the wolf, the bear, and the wild boar, have been gradually exterminated by the increase of population and the progressive advance of the arts of civilized life. The fox, though preserved for the purpose of the chase, is now comparatively scarce. Both the badger and the otter were formerly much more common than at present. Two or three varieties of the weasel and marten are generally distributed, and the wild cat is still found in the wooded districts both of Great Britain and Ireland, but is most frequent in the north part of Britain.

Of the order *rodentia*, or gnawing quadrupeds, the common squirrel is generally diffused in Great Britain, but has only lately been introduced into Ireland: varieties of the hare and rabbit tribe are dispersed throughout the islands. The common dormouse is confined to Great Britain, but various species of mice and rats are universally distributed over the whole king-

dom. The common hedgehog and the mole (which belong to the order of insect-eating animals) are generally dispersed over the fields and heaths of England, but the latter does not extend either into Ireland or the northern parts of Scotland. Ten species of the bat tribe are enumerated as occurring in different parts of the kingdom.

Among ruminating animals, besides the ordinary domesticated species, are the red deer or stag; the fallow deer; the roebuck (now rare in England, but abundant in some parts of Scotland); the common goat, still found in a wild state among the mountains of Wales; and the wild ox, the breed of which is still preserved in the parks of some of our nobility. The red deer is found in Ireland, but the roebuck does not occur in that island. The remains of a large species of deer, commonly known as the Irish elk, which is now totally extinct, have been found in England and the Isle of Man, as well as in Ireland.

The domesticated quadrupeds, as the ox, sheep, horse, dog, and others, are extremely numerous in every part of the British Islands, and the rearing of some of these occupies the industry of a large proportion of the inhabitants (Arts. 52, 82, and 104).

Birds are very numerously distributed, and of the total number of species native to Europe, considerably more than half are found within our own shores. Most of these are birds of small size, as the nightingale, blackbird, linnet, thrush, goldfinch, skylark, and others belonging to the family of warblers; besides the sparrow, wren, and many others of general distribution. Some of the birds most numerous in Britain are, however, migratory in their habits, as the swallow, cuckoo, martin, and others, which only visit these islands on the approach of the summer: others, again, as the redwing, fieldfare, woodcock, snipe, and some aquatic birds, are winter visitors, migrating hither from more northern latitudes. Birds of the gallinaceous order,—including the domestic poultry, besides partridges, grouse, and pheasants, though numerous as individuals, are less so as species. The ptarmigan only occurs here in the highest and wildest parts of Scotland and the islands of the Hebrides and Orkney groups; the red grouse is peculiar to the British Islands. Among birds of prey, the falcon and hawk tribes occur, but the former are becoming scarce; the golden eagle, the largest bird found in the British Islands, frequents the higher mountain regions both of Great Britain and Ireland, but is chiefly found in the north of

land. Another species of eagle, the white-tailed or sea-eagle, is common in the Hebrides and the Orkney and Shetland Islands.

Of the total number of reptiles known to naturalists the British Islands possess only thirteen, but five of which are natives of Ireland. Frogs and toads are pretty generally diffused. The common viper, or adder, and also the harmless ringed snake, are common in all parts of Great Britain, though the latter of these is less numerous in Scotland than the former: no snakes occur in Ireland (Art. 102).

The seas which lie around the shores of Britain are exceedingly abundant in the kinds of fish most generally useful as the food of man, as the cod, turbot, mackarel, herring, pilchard, and many others. Most of these frequent shallow water, and the shores and banks of the North Sea teem with the greatest abundance of them. The Dogger Bank, midway between the coasts of England and Holland, is (next to the banks of Newfoundland) the seat of the most extensive cod-fishery; and the cod is also taken in considerable numbers all round the shores of Britain, particularly on the north and west coasts of Scotland. The herring is extensively diffused all round our shores; the mackarel is chiefly abundant on the southern coasts of England; and the pilchard in the western extremity of the English Channel, near the counties of Devon and Cornwall. All of these fish are gregarious, and alternately approach the shores in vast swarms as the season for spawning draws near, and afterwards retire during the winter into deeper water. The crab, lobster, oyster, shrimp, and prawn, are also abundant round the shores of Britain and on the south side of the English Channel, and, small as some of these are, their fishery is of considerable commercial importance.

A vast number of insects occur in every part of the British Islands, many of which are familiarly known by our ordinary and daily observation. These, however, though interesting to the naturalist, and many of them designed to fulfil important functions in the general economy of the natural world, require no special notice in so general a survey as the present.

The geography of the different portions of the British Archipelago will be more particularly described under the three headings of *England* (including *Wales*), *Scotland*, and *Ireland*.

MAP OF

showing the

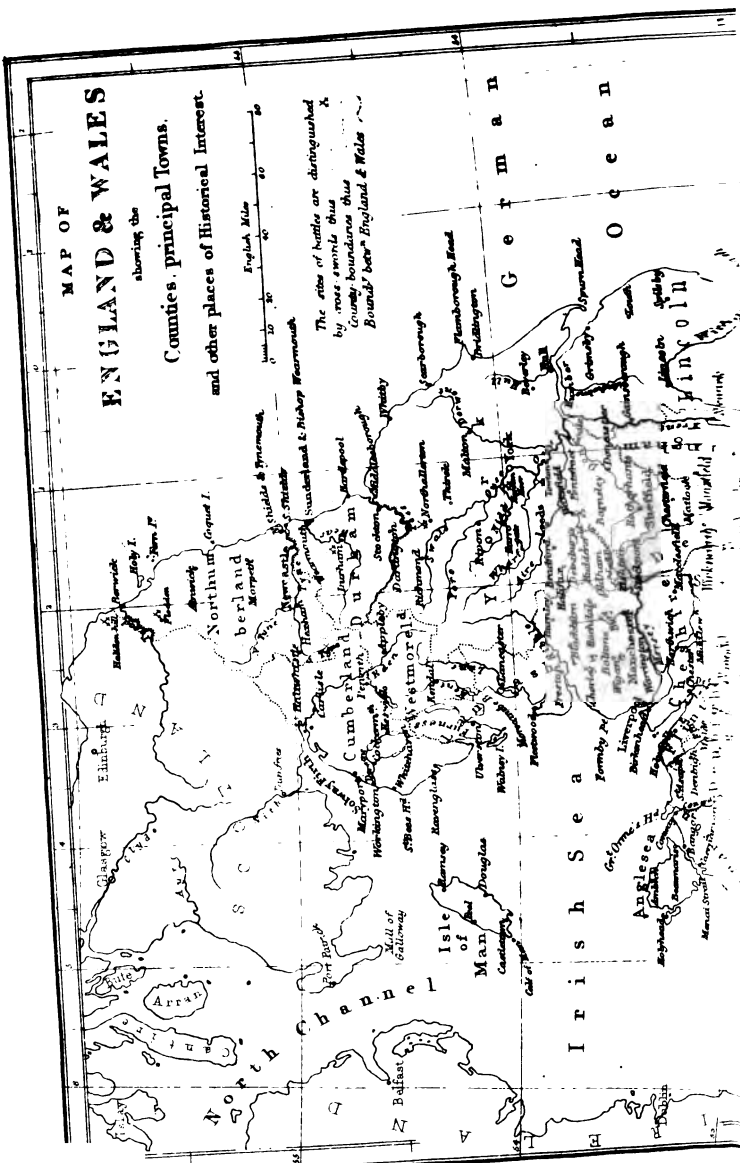
Counties, principal Towns.

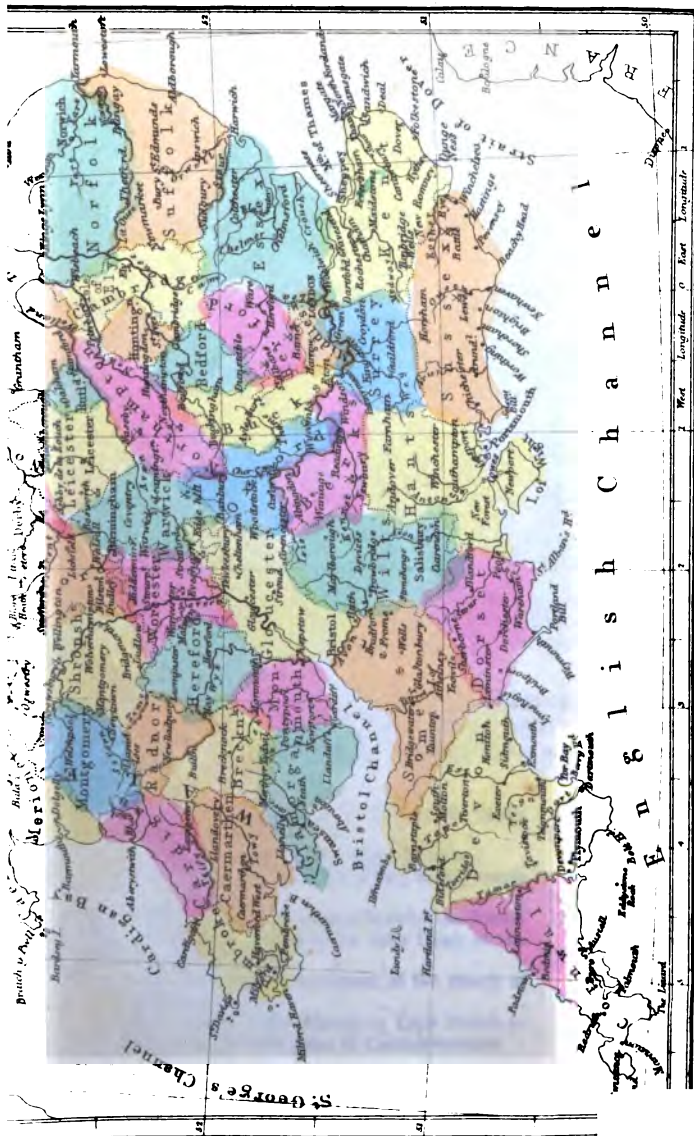
and other places of Historical Interest.

English Miles

3

The sites of battles are distinguished
by roses, & within this
county boundaries thus
Bound betⁿ England & Wales





British Isles

Longitude 0 East Longitude 1 West

Latitude 50 North Latitude 55 North

SECTION. I

ENGLAND AND WALES.

(7.) *Extent and Boundaries.*—England (including Wales) is bounded on the north by Scotland; on the west by the Irish Sea, St. George's Channel, and the Atlantic Ocean; on the south by the English Channel; and on the east by the German Ocean. The line of division between England and Scotland is formed by the lower course of the river Tweed, the high ground of the Cheviot Hills, and the estuary of the Solway Firth.

The most northern point of England and Wales is adjacent to the town of Berwick-upon-Tweed, lat. $55^{\circ} 46'$; its most southern point is the headland called The Lizard (in Cornwall), in lat. $49^{\circ} 58'$. A straight line between these two points (which does not pass continuously over the land, but crosses the estuary of the Bristol Channel), measures 423 English miles. The most eastern point, Lowestoft Ness, on the coast of Suffolk, is in $1^{\circ} 46'$ *E.* longitude, and the most western extremity is the Land's End of Cornwall, in $5^{\circ} 42'$ *W.* longitude. A line drawn between Lowestoft Ness and the Land's End measures 364 miles; but the real breadth of the island is greatest in the south—where a straight line drawn between the Land's End and the South Foreland of Kent measures 320 miles,—and thence diminishes northward, until, towards its northern extremity, along the line of the 55th parallel, it is only 64 miles between the opposite seas on either side. The *mean* length of the country from north to south is indicated by the meridian of 2° west, which passes through the town of Berwick-upon-Tweed, and which thence to the south coast of Dorsetshire measures 360 miles;—the average *breadth* of the island to the south of the parallel of 53° is about 220 miles, and between the 53rd and 55th parallels, about 120 miles.

(8.) If, in order to obtain a correct general idea of the shape of the country and the direction of its coasts, we connect some of the salient points of the land by straight lines, we obtain the following results:

A line drawn from the Land's End to the South Foreland measures	320 miles.
From the South Foreland to Lowestoft Ness	95 "
From Lowestoft Ness to Spurn Head, at the mouth of the Humber	102 "
From Spurn Head to the town of Berwick-on-Tweed	173 "
From Berwick-on-Tweed to St. Bees Head, on the coast of Cumberland	108 "
From St. Bees Head to Liverpool, at the mouth of the Mersey	78 "
From the mouth of the Mersey to Cape Braich-y-Pwll, the south-west point of Caernarvonshire	86 "

From Braich-y-Pwll to St. David's Head . . .	69 miles.
From St. David's Head to the mouth of the River Avon (of Bristol) . . .	113 "
From the mouth of the Avon to Hartland Point, in the north-west of Devonshire . . .	86 "
From Hartland Point to the Lands End . . .	83 "

We have thus an irregular polygonal figure, the shape of which, however, bears some general resemblance to that of a triangle, of which the line between the Land's End and the South Foreland forms the base, and the town of Berwick-upon-Tweed the apex.

The total superficial area of England and Wales is 57,813 English square miles, of which 50,387 belong to England, and 7426 to Wales. The length of coast-line, measured along the principal salt-water inlets and estuaries, exceeds 1800 miles.

(9.) *Capes*.—The principal headlands on the east coast are—the *North Foreland* (Kent), 280 feet in height; the *Naze* (Essex), 100 feet; *Lowestoft Ness* (Suffolk), a low tract of sand; *Spurn Head* (Yorkshire), a low sand-bank, insulated at high water; *Flamborough Head* (ibid.), 214 feet.

On the west coast are—*St. Bees Head* (Cumberland), 222 feet; *Formby Point* (Lancashire); the *Point of Aire* (Flintshire); *Great Orme's Head* (Caernarvonshire), 673 feet; *Linas Head* (Isle of Anglesey); *Braich-y-Pwll* (the s.w. extremity of Caernarvonshire); *St. David's Head* (Pembroke); *St. Gwen's Head* (ibid.); *Worms Head* (Glamorganshire); *Hartland Point* (Devon); and the *Land's End* (Cornwall), which is formed by cliffs from 60 to 100 feet high.

The principal capes on the south coast are—*The Lizard* (Cornwall), 224 feet high; *Bolt Head* (Devon), 430 feet; *Berry Head* (ibid.); *Portland Bill* (Dorset), 30 feet; *St. Alban's Head* (ibid.), 344 feet; *St. Catherine's Point* (Isle of Wight); *Selsey Bill* (Sussex); *Beachy Head* (ibid.), 564 feet; *Dunge Ness* (Kent); and the *South Foreland* (ibid.), 400 feet.

(10.) *Coasts*.—The western shores of Britain are generally bolder and more elevated than the eastern, and in the portion of the island now under description the most continuous lines of high and rocky coast occur on the shores of South Wales and Cornwall. About three-eighths of the whole length of the western coast consist of cliffs, the remainder either of low sandy, or marshy, land.

Rather more than half the south coast of England is lined by cliffs, which are generally higher in the western than in the eastern part of the channel. The promontory of Portland Bill is the termination of a narrow strip of land called the Isle of Portland, though really a peninsula, and connected with the mainland by the Chesil Bank,—a ridge of shingle upwards of 10 miles in length, composed of loose rounded stones.

On the east coast, the cliffs which occur to the north of Flamborough Head are bold and elevated; those to the south of that point form in

general low and nearly level walls, composed either of clay or chalk. Immediately to the south of the Humber, and round the west and south sides of the Wash, and also on great part of the coast of Essex, the shores are low and marshy.

(11.) *Estuaries, Bays, &c.*—The principal inlets on the east coast are—the mouth of the Tees, the estuary of the Humber, the Wash, and the mouth of the Thames.

On the south coast are Portsmouth Harbour, Southampton Water, Weymouth Bay, Tor Bay, Plymouth Sound, Falmouth Bay, and Mounts Bay. The channel which separates the Isle of Wight from the mainland is called Spithead in its eastern half, and the Solent in its western portion.

On the west coast is the great estuary of the Bristol Channel, different portions of which form Barnstaple, Swansea, and Caermarthen Bays. Further to the northward are Milford Haven, St. Bride's Bay, Cardigan Bay; the mouths of the Dee, Mersey, and Ribble;—Morecambe Bay, and the Solway Firth. The channel between the Isle of Anglesey and the mainland is called the Menai Strait.

The coast of the English Channel to the east of Selsey Bill is deficient in natural harbours, which are also wanting in many parts of the eastern shores of England; but along the remainder of the south coast, and also along great part of the western shores, many of the estuaries form excellent harbours. Among the principal of these are, Portsmouth Harbour, Plymouth Sound, Falmouth Harbour, and Milford Haven, all of which are capable of receiving vessels of the largest size, in perfect security.

(12.) *Depth of Seas; Rise of Tides, &c.*—Of the seas which lie around the shores of Britain, that on the west side is deepest,—that on the east, the most shallow. Near the east coasts of England the mean depth of the German Ocean is not generally more than from 100 to 120 feet at a distance of about 40 miles from the shore; off the mouth of the Thames, it is about 120 feet; off the Wash, only 70 feet; off Flamborough Head, 120 feet; and off the coast of Northumberland, from 200 to 250 feet. At a greater distance from land, the mean depth of its bed is only about 145 feet in the parallel of Flamborough Head, and 100 feet in the latitude of the mouth of the Tyne, but it deepens considerably further northward. In general, however, the central parts of the German Ocean are less deep than those nearer the land (excepting close in shore), owing to extensive banks which occupy a large portion of its bed. The largest of these is the *Dogger Bank*, which stretches through its central part for more than 300 miles from north to south. Further to the south, the *Goodwin Sands*, which lie off the coast of Kent, extending about 10 miles

in length by 3 or 4 miles in breadth, form a dangerous impediment to navigation. The mean depth of water over the Goodwin Sands does not exceed from 6 to 10 feet. The deeper channel between these sands and the coast of Kent forms a roadstead called *the Downs*. An extensive bank which lies off the south-east coast of Essex forms the *Maplin Sands*. Numerous other sand-banks occur within the estuary of the Thames, and render the navigation near the mouth of that river exceedingly intricate and dangerous.

The English Channel gradually increases in mean depth from about 150 feet in its eastern, to between 250 and 300 feet in its western, portion: the deepest part of the sea between Beachy Head and the opposite coast of France is 210 feet; off the south coast of the Isle of Wight, 276 feet; and off the Land's End, at the entrance of the channel, 380 feet.

The bed of the Irish Sea is deep throughout, and, excepting at its north-eastern extremity, is not generally less than from 200 to 400 feet in mean depth. Midway between the coast of Cumberland and the Isle of Man, the depth is about 100 feet; between the Isles of Man and Anglesey, 200 feet; and between Anglesey and the coast of Ireland, 400 feet. The central part of St. George's Channel has a mean depth of 300 feet; the sea near the western extremity of the Bristol Channel has an average depth of about 150 feet, which increases southward along the shores of Cornwall to 250 feet.

The rise of tide is in general greater on the west than on the south or east coasts, and, owing to the fact that the estuaries on the west side of the island have their openings directed *towards* the advance of the great tidal wave of the Atlantic, the height which the tide attains in them is very considerable. In the Solway Firth, in Morecambe Bay, and at the mouth of the Severn, the tide advances with great rapidity and impetuosity; and as its channel is narrowed by the nearer approach of the opposite shores, it rises to an astonishing height, amounting at the mouth of the Severn (near the junction of the Wye) to 60 feet. A similar phenomenon, though to a less conspicuous extent, occurs in the Wash, on the east coast. The general rise of the tides around the shores of England is, however, much less; at the mouth of the Thames, the ordinary rise is 19 feet; at Yarmouth, 7 feet; at the entrance of the Wash, 22 feet; at the mouth of the Humber, 18 feet; and at the mouth of the Tyne, 15 feet. In the English Channel, off Brighton, the rise of tide is 21 feet; at Portsmouth, 17 feet; and at the mouth of Plymouth Sound, 16 feet. In the Irish Sea, the rise at the entrance of the Solway Firth is 21 feet; at the mouth of the Mersey, 16 feet; at Holyhead, 24 feet; off the entrance of Milford Haven, 36 feet; and off the south-west coast of Cornwall, 19 feet. At the entrance of Dublin Bay, on the west side of the same sea, it is only 12 feet; and further south, on the coast of Wicklow, much less.

(13.) England is divided into 40 *counties* or *shires*, which may be arranged in the following manner:

<i>Six Northern.</i>	<i>Five Eastern.</i>	<i>Fourteen Midland.</i>
Northumberland.	Lincolnshire.	Staffordshire.
Durham.	Cambridgeshire.	Derbyshire.
Cumberland.	Norfolk.	Nottinghamshire.
Westmoreland.	Suffolk.	Leicestershire.
Yorkshire.	Essex.	Warwickshire.
Lancashire.		Worcestershire.
		Oxfordshire.
		Buckinghamshire.
		Middlesex.
		Hertfordshire.
		Bedfordshire.
		Huntingdonshire.
		Northamptonshire.
		Rutlandshire.
<i>Nine Southern.</i>	<i>Six Western.</i>	
Kent.	Cheshire.	
Surrey.	Shropshire.	
Sussex.	Herefordshire.	
Berkshire.	Monmouthshire.	
Hampshire.	Gloucestershire.	
Wiltshire.	Somersetshire.	
Dorsetshire.		
Devonshire.		
Cornwall.		

Yorkshire is divided into three parts, called *ridings* (the North, East, and West Ridings).

Wales is divided into twelve counties, as follows :

<i>North Wales.</i>	<i>South Wales.</i>
Anglesey.	Cardiganshire.
Caernarvonshire.	Radnorshire.
Denbighshire.	Brecknockshire.
Flintshire.	Glamorganshire.
Merionethshire.	Caermarthenshire.
Montgomeryshire.	Pembrokeshire.

(14.) *Surface of the Land.*—Only the north part of England has a mountainous character : the greater portion of its surface is either undulating, or consists of extensive plains. And even the most elevated regions, with few exceptions, consist rather of high and wide-spreading moorlands, with rounded hill-tops, than of continuous mountain chains or ranges, properly so called.

The *Cheviot Hills*, on the northern border of England, form part of an extensive mass of high land which stretches in an east and west direction through Southern Scotland, and which spreads out to a considerable breadth. Their highest summit, Cheviot Hill (lat. $59^{\circ} 25'$, long. $2^{\circ} 1' \text{ w.}$), is a round-topped mountain, of 2658 feet in elevation; to the east, and separated from it by a narrow valley, is Hedgehope, 2325 ft. Carter Fell, further to the s. w., is 1502 ft. The principal mass of the Cheviot Hills consists of porphyry, and their highest parts are covered with peat. Limestone is quarried at Carter Fell.

Near the western extremity of the Cheviot Hills, about $2^{\circ} 40' \text{ w.}$, is the commencing portion of a broad tract of elevated land, which thence extends southwards for a distance of about 180 miles, nearly to the banks of

the Trent, in lat. $52^{\circ} 50'$. This constitutes the most continuous extent of elevated land in the whole of England, and is distinguished as the *Pennine Chain*: it is not, however, a mountain range, but a succession of broad, irregular masses of land, forming an alternation of high moorlands and mountain-valleys, with some particular summits which rise above the general level of the entire region. Nearly on the line of the 55th parallel a considerable depression occurs, through which the Roman wall formerly passed, and across which the railway between Carlisle and Newcastle runs in the present day. The summit-level of this railway, where it crosses the line of watershed between the eastern and western seas, is 446 feet above high-water mark in the Tyne. To the south of this depression the ground rises considerably, and assumes a mountainous character. Cross Fell (lat. $54^{\circ} 43'$, long. $2^{\circ} 30'$), which contains the sources of the South Tyne and the Tees, is 2091 feet in elevation, and is the highest summit of the Pennine system. Further southward, within the limits of Yorkshire, are the high summits of Wharfedale, 2384 feet, Ingleborough, 2361 feet, and, separated from the latter by the valley of the Ribbles, Pen-y-gent, 2270 feet. To the south of these high masses the mountains assume still more the character of wide moorlands, and no longer form so well-defined a line of watershed as in their previous course. Pendle Hill (lat. $53^{\circ} 51'$, long. $2^{\circ} 20'$), 1803 feet high, is considerably to the west of the central line of elevation.

In its progress southward, the high ground forms the district of the Lancashire Moorlands (in the eastern part of the county of that name), upon which is Rivington Pike, 1545 feet. On the borders of Yorkshire and the north-east extremity of Cheshire is Holme Moss, over which the Huddersfield turnpike-road passes at an elevation of 1857 feet. In the north of Derbyshire the high lands form the district called the Peak,—a region of rounded hills and elevated moors, intersected by deep valleys, the sides of which present steep escarpments: its highest point, Kinder-scout, is 1981 feet above the sea. Axe-edge Hill, the source of the Dove, at the north point of Staffordshire, is 1751 feet. Further to the south and south-west are the Staffordshire Moorlands, in the eastern part of which, immediately to the north of the 53rd parallel, are the Weaver Hills, 1154 feet in height. The high ground finally sinks down on the banks of the Trent, towards which it presents several long valleys, or dales, which have a gradual slope from N. to S., and are watered by the Derwent, the Dove, and other tributaries of that river.

The breadth of the entire mass of the high grounds forming the Pennine Chain is from 45 to 50 miles. It consists throughout of carboniferous or mountain limestone, which on its lower declivities forms extensive deposits of coal. The Peak of Derbyshire is remarkable for numerous caverns and subterranean passages, which are a frequent accompaniment of the mountain limestone formation, and which also occur at the base of Ingleborough and Wharfedale, in Yorkshire.

(15.) About the latitude of $54^{\circ} 20'$ the Pennine Chain is connected by a transverse range of high ground with the system of the *Cumbrian Mountains*, which form a distinct mountain region, and cover a large portion of Cumberland and Westmoreland, together with the district of Furness, in the north of Lancashire. The Cumbrian mountains are not a chain or range of heights, but a group or mountain-knot: the chief axis of elevation

lies in a general east and west direction, but the mountains spread out on both sides of the main line, leaving between them long and narrow valleys which open out to all points of the compass, and which form the basins of numerous lakes. The entire extent of the mountain region is about 34 miles from *e.* to *w.*, and rather more from *n.* to *s.* The highest point, Scafell Pikes, towards the western part of the group, is 3166 feet above the sea, and is the most elevated summit in England. Helvellyn, nearly in the centre of the group, is 3055 feet; and Skiddaw, further to the north-west, 3022 feet. The mountain called Conistone Old Man, in the southern part of the group, is 2597 feet. The higher portions of the region now described have a more rugged and truly mountainous character than any other part of England, and surpass in variety of general aspect, and in the depth of the valleys by which they are intersected, the most elevated portions of the Pennine Chain. The numerous lakes also give a peculiar character to this district, and add greatly to the beauty of the scenery.

The higher region of the Cumbrian mountains consists almost entirely of rocks of slaty formation, and is bordered on the north-west, north, and south sides by a raised belt of mountain limestone (in one portion of which an extensive coal-field occurs), and on the west by a narrow plain of new red sandstone. Slate is extensively quarried, chiefly in the southern part of the group; and a valuable mine of plumbago, or black-lead, is worked in the high valley of Borrowdale, situate in the heart of the mountain region. Granitic rocks occur in three different places, but are of limited extent.

(16.) On the west side of the high grounds of the Pennine Chain are two extensive plains, divided from one another by the group of the Cumbrian mountains. The northern of these, which extends between the hills and the shores of the Solway Firth, and belongs chiefly to the valley of the river Eden, may be distinguished as the *Cumbrian Plain*. That to the south of the Cumbrian mountains, which stretches from the eastern shores of Morecambe Bay along the coast of Lancashire into Cheshire, and comprehends the greater part of the latter county, forms the *Cheshire Plain*.

The greatest dimensions of the Cumbrian Plain are east and west, in which direction it measures about 30 miles: the hills on its eastern side rise with a steep ascent. The southern plain is restricted to a mere narrow strip along the northern coast of Lancashire; but in the south part of that county, and also in Cheshire, it has a breadth of from 30 to 35 miles. It is to this latter portion that the appellation of the Cheshire Plain properly belongs. Both the Cumbrian and the Cheshire Plains belong to the new red sandstone formation: vast beds of rock-salt, and also brine-springs, occur in that portion of the Cheshire Plain which is watered by the river Weaver. In the south of Lancashire is an extensive coal-field.

(17.) To the east of the Pennine Chain is the *Plain of York*, the most extensive valley in the island. The whole extent of the York Plain is upwards of 160 miles in a north and south direction, from the neighbourhood of the river Trent to the eastern coasts of Durham and Northumberland. Its widest part, in the parallel of the Humber, is about 45 miles from west to east; at York its breadth is about 30 miles, which gradually becomes less further northward, where it is narrowed by the near approach of the high grounds of the Pennine Chain to the shores of the German

Ocean. Except in its most northern part, however, the York Plain does not actually reach the coast, but is separated from it by the elevated regions of the North York moorlands and the wolds of Yorkshire and Lincolnshire.

The great coal-field of Durham and Northumberland (above 700 square miles in area) occurs in the northern portion of this plain; and at its southern extremity is the Leeds and Nottingham coal-field, of equal (or perhaps greater) extent. Through the western border of this plain runs a narrow belt of magnesian limestone, which is remarkable for the numerous quarries of excellent building-stone worked within its limits.

(18.) The *North York Moors*, which form part of the eastern boundary of the York Plain, commence immediately to the south of the estuary of the Tees, and form a high barren tract, with a rounded surface, rising in some places into bleak hills: the highest elevation is Burton (or Botton) Head, 1485 feet. The steepest side of these moors is on the north and west,—the longer slope on the south, towards the valley of the Derwent, by which they are divided from the Yorkshire wolds.

The *York Wolds* are a high tract of land belonging to the chalk formation, of which they form the most northern limits. On their north and west sides the ascent is steep, and Wilton Beacon, on the western escarpment, is 809 feet above the sea; their eastern slope is gradual, and is divided from the sea by a low undulating tract, called Holderness, which consists of clays and gravels of tertiary formation.

The broad estuary of the Humber separates the wolds of Yorkshire from the Lincolnshire wolds, which are also chalk, and of similar character, having their steeper side on the west, and a gradual slope on the east towards a low and level tract which immediately adjoins the coast.

(19.) To the south of the 53rd parallel, and the eastward of the 2nd meridian (w. long.), the surface of England is chiefly of an undulating character, with broad plains which have a gradual slope towards the banks of the rivers. The hills which occur are of greatly inferior elevation to those above described, and only two eminences exceed 1000 feet. These are, Broadway Beacon, belonging to the chain of the Cotswolds; and Inkpen Beacon, nearly at the point of junction of the three counties of Berks, Hants, and Wilts.

From the e. side of the Wash a range of high ground extends in a general s. w. direction (passing to the e. of Newmarket and Cambridge) to the banks of the Thames, which it reaches in the great bend of the river between Henley and Wallingford: this tract consists throughout of chalk. It only assumes the character of a continuous range towards its south-western portion, where it forms the *Chiltern Hills*: the highest parts of these are about 820 feet above the sea. The other parts of the range may be distinguished as the *East Anglian Heights*, the principal slope of which is to the west, towards the valley of the Ouse: their rise above the plain to the eastward is very gradual, and the high ground is in many places broken through by the rivers belonging to the basin of the Ouse. Kensworth Hill, in the n. w. of Hertfordshire, is 904 feet, and the Gog Magog Hills (to the s. e. of the town of Cambridge) are 302 feet above the sea. Hunstanton Cliff, at the east side of the entrance of the Wash, is the northern termination of this extensive formation of chalk.

(20.) To the east of the line of chalk elevations just described, and to the north of the lower course of the Thames, is an extensive plain, which extends to the shores of the German Ocean. This forms the *Eastern Plain* of England, and is an almost perfectly level tract, except in the south and south-western parts of Essex, and the adjacent portion of Middlesex; its continuity is here interrupted by a range of high ground which commences near Colchester, and extends in a s. w. direction (through Hainault and Epping Forests) to the north of London, terminating in the hills of Highgate and Hampstead. The elevation of these heights is inconsiderable: Langdon Hill (to the s. e. of Brentwood, and facing Gravesend, on the opposite bank of the Thames) is 620 feet above the sea, and the summit of Highgate Hill 450 feet.

(21.) Around the west and south sides of the estuary of the Wash extends a low and perfectly level region, known as the *Fen District*, from the circumstance of its being naturally of a marshy or fenny character. The whole extent of the Fen District, from the banks of the River Cam (below Cambridge) in the south, to the neighbourhood of Spilsby (in Lincolnshire) in the north, is above 60 miles; and its greatest breadth, from Lynn on the east to Market Deeping on the west, about 30 miles. The low tract to the east of the Lincolnshire wolds (Art. 18) may indeed be regarded as a continuation of the same region.

The substratum of the Fen District consists of stiff clay, upon which is a covering of earth and accumulated vegetable matter: many parts of it are now very fertile, but have only been rendered so by immense outlay of money, and the drainage of the whole region is still imperfect.* In the western part of the fens are several shallow lakes or meres, of which the largest, Whittlesea Mere, is $2\frac{1}{2}$ miles long by $1\frac{1}{2}$ broad. These meres owe their origin to the accumulation of water from the uniformly flat character of the district, and the want of a sufficient outfall for the streams.

(22.) Westward from the limits of the Fen District, as far as the high grounds bordering the valley of the Severn, and between the valley of the Trent on the north and the basin of the upper Thames on the south, the middle parts of England consist in general of a high level, which we may distinguish as the *Central Plain*. Many of the principal rivers of England have their origin in this district, which, however, exhibits no well-defined line of watershed, and is devoid of any striking feature of superficial contour. Its average elevation varies from 200 to 400 feet: the town of Buckingham is 265 ft.,—Northampton, 198 ft.,—Oakham, 362 ft.,—Leicester,

* A large portion of the Fen country is commonly known by the name of the Bedford Level, from the circumstance of the Earl of Bedford having formed a company for the purpose of its drainage, in the time of Charles I. The drainage was originally effected by means of windmills, after the practice common in Holland, and the water thereby raised into artificial channels and so carried off to the sea; but steam-engines are now chiefly employed for this purpose. The most swampy region, and that which has caused the greatest expense in drainage, belongs to the lower courses of the Ouse and Nen and the low grounds about March, Wisbeach, and Whittlesea.

326 ft.,—and Birmingham, 341 ft., above the sea. The tract between the sources of the Welland and the Nen, which flow into the Wash,—the Avon, which runs past Stratford and Evesham into the Severn,—and the Soar, which belongs to the basin of the Trent,—has perhaps the greatest average elevation. The sources of all these rivers are within a few miles of each other,—those of the Welland and the Avon less than three miles apart; the Ouse, and some of the tributaries of the Thames, have also their origin in the more southern part of the same region.

Three detached coal-fields occur in the central plain, in the neighbourhoods of Coventry, Ashby-de-la-Zouch, and Dudley, all situated towards its northern and western portion; the last is of the greatest extent, and is also the seat of an extensive iron manufacture.

The ground which bounds the eastern side of the valley of the Severn is generally of inconsiderable height in its northern part, but rises into hills further to the southward. The Clent Hills (in the n. e. part of Worcestershire) are 1007 feet in elevation: further south are the Lickey Hills, about 800 feet. On the borders of Oxfordshire and Warwickshire, towards the south-western limits of the Central Plain, are the Edge Hills, 826 feet. Along the east side of the valley of the lower Severn is a range of continuous elevations called the *Cotswold Hills*, the highest of which,—Cleeve Hill, near Cheltenham,—is 1134 feet. The Cotswold Hills (which derive their name from the ancient sheep-cots formed on the hills or wolds) terminate on the north-east side of the Avon of Bath and Bristol, the former of which cities they surround in a beautiful amphitheatre: Lansdown Hill, to the north of Bath, is 813 feet high. On the opposite side of the Avon, a few miles south of Bristol, is Dundry Hill, an isolated eminence belonging to the same formation as the Cotswolds, 790 ft. high.

(23.) The *Valley of the Severn* is really a continuation of the plain country of Cheshire and Lancashire (Art. 16), and, together with that tract, completely divides the mountains of Wales from the rest of the island. Its western boundary is formed by the high ground connected with Wenlock Edge and the elevations of the Clee Hills, in Shropshire,—the Malvern Hills, on the borders of Worcestershire and Herefordshire,—and the hilly district of Dean Forest, further to the south.

The hill called the Wrekin (to the south-east of Shrewsbury and on the east side of the Severn) is a detached eminence, 1320 feet in height. The Clee Hills rise to 1805 feet; and Hereford Beacon, the highest point of the Malvern Hills, is 1444 feet above the sea. The Malvern Hills form a continuous but narrow range, of nine miles in length, extending nearly in a straight line from north to south: on the east side they rise at a considerable angle from the level of the valley, but on the west their ascent is more gradual, and the country exhibits in that direction a succession of small hills for the distance of some miles.

The high tract of Dean Forest has an elevation of about 900 feet, and forms a kind of undulating table-land, in some parts bleak and bare, but in others yielding a short grass, well adapted for sheep-pasturage. The wooded part consists of oak and beech trees, which formerly supplied a great quantity of valuable timber.

The Valley of the Severn is locally distinguished in different parts as the Vale of Worcester, the Vale of Gloucester, and the Vale of Berkeley, the last of which lies wholly to the east of the river, in its lower course,

and extends along the foot of the Cotswold Hills. The Vale of Evesham, which opens into the Valley of the Severn on the eastward, is watered by the lower course of the Avon. All of these valleys are distinguished by great natural beauty, and have a rich and fertile soil.

Two considerable coal-fields occur in the Valley of the Severn: the northern, that of Coalbrook Dale, extends for several miles on both banks of the river, in a north and south direction, and also furnishes abundance of iron. The other occupies a large part of the high ground of Dean Forest.

(24.) The part of England which lies to the south of the river Thames, and to the east of the Salisbury Avon,* is traversed by ranges of hills (or rather high downs) running in an east and west direction, with undulating country between and adjacent to them. Two principal ranges are distinguished,—the *North Downs*, stretching from the neighbourhood of Dover, through Kent and Surrey, into the north of Hampshire,—and the *South Downs*, extending from Beachy Head westward along the coast of Sussex, and thence through the middle part of Hampshire (past Winchester) to the neighbourhood of Salisbury. Both of these ranges consist throughout of chalk.

In the east part of Kent, the chalk tract of the *North Downs* spreads out to a considerable breadth; but in advancing westward, it gradually assumes more of the character of a single ridge. The elevation of the hill upon which Dover Castle stands, on the north-east side of the town of Dover, is 469 feet: the hills near Hollingbourn, east of Maidstone, exceed 600 feet: Botley Hill, on the borders of Kent and Surrey, is 880 feet. Leith Hill, 993 feet, to the south-west of Dorking, in Surrey, and also Hind Head, further westward, are separated from the range of downs by a slight depression: neither of these two belong to the chalk formation. To the west of Guildford, the high lands form a narrow ridge, which has the name of the Hog's Back, and runs westward in an unbroken line, for a distance of $6\frac{1}{2}$ miles, to the neighbourhood of Farnham: the high road between these places runs on the top of the ridge. In the north-west corner of Hampshire, on the borders of Berkshire, are Highclere Beacon, 900 feet, and Inkpen Beacon, 1011 feet, the latter of which is the highest chalk-hill in this island.

The country on the north side of the range above traced has a gradual slope towards the valley of the Thames, forming in some places a varied and undulating surface, with rounded hills and elevated downs, as the high grounds about Epsom, and also Banstead Downs, in the north part of Surrey; and Bagshot Heath, further westward, in the neighbourhood of Windsor.

* The word Avon, which in the Celtic dialect signifies a river, is of frequent occurrence, and is apt to lead to some confusion. There are no less than nine rivers of this name in different parts of England and Scotland. The only three of any magnitude, however, are those already mentioned above,—the Avon of Warwick and Evesham (distinguished as the Upper Avon,) which joins the Severn at Tewkesbury,—the Avon of Bristol (or, Lower Avon),—and the Avon of Salisbury, which flows into the English Channel. Similarly, there are in Great Britain five rivers which bear the name of Esk, three that of Rother, three called the Dee, and three bearing the name of Derwent.

From Beachy Head, which consists of chalk-cliffs 564 feet high, the *South Downs* run near the shores of the English Channel as far west as Brighton, whence they diverge further inland, leaving between their base and the sea a tract of undulating surface, which gradually increases in breadth as the hills advance further to the west. Ditchling Beacon (six miles to the north of Brighton) is 858 feet high; Rooks Hill Beacon (four miles north of Chichester), 702 feet; and Butser Hill, (near Petersfield, in Hampshire), 917 feet. A transverse ridge of chalk, called the Alton Hills, runs northward from Butser Hill, and connects the South with the North Downs.

A considerable part of the district intervening between the North and South Downs, embracing the south-west portion of Kent and the adjacent portions of Sussex and Surrey, is called the Weald, from the ancient Saxon name for wood. This was formerly an immense forest, inhabited only by swine and deer, and it still contains some extensive woodlands; but the greater part is now under cultivation, and is a highly fertile tract.

Neither the North nor the South Downs form continuous ridges, but, like the chalk elevations in other parts of the island (Art. 19), are in several places cut through by different river-valleys. The watershed between the streams which flow on the one side into the English Channel, and those which in another direction join the basin of the Thames, is not found in the chalk, but in a range of heights intermediate between the North and South Downs, and belonging to a different formation,—that called the Wealden, (from the district of the Weald, above mentioned,) which consists of various clays and sand. The chain of the *Wealden Heights* commences near Folkestone, (to the south-west of Dover,) and extends through the south part of Kent, and nearly along the northern borders of Sussex, where it forms the high ground of Ashdown and Tilgate Forests. Some parts of this range are from 600 to 800 feet high: Crowborough Beacon, on Ashdown Forest, is 804 feet.

In the south part of Kent, adjacent to Dunge Ness, is a marshy tract, called Romney Marsh, a large portion of which consists of land reclaimed from the sea, and preserved from its inundations by artificial means.

(25.) In the southern part of Wiltshire, and chiefly on the west side of the valley of the Avon, is *Salisbury Plain*,* a tract of high undulating country, which extends about 20 miles from east to west, and about 15 from north to south. It is for the most part a barren and woodless district, covered with a short thin grass, and only admitting of cultivation in the valleys of the streams by which it is crossed. The mean height of Salisbury Plain above the level of the sea is perhaps from 500 to 600 feet. The Marlborough Downs, a similar tract, adjoin Salisbury Plain on the north, and stretch eastward into the adjacent county of Berkshire, towards the banks of the Thames.

The high grounds of Salisbury Plain and the Marlborough Downs belong to the chalk formation, and are united on the east with the ranges of the

* On Salisbury Plain is Stonehenge, an ancient Druidical monument, and one of the earliest remains of antiquity in the island. It consists of four concentric rings of huge stones, two of them circles, and two of oval shape. The stones are of irregular size and shape, and many of them displaced from their original position.

North and South Downs; on the north-east they are only divided by the course of the Thames from the chalk formations of the Chiltern and East Anglian Hills, already described (Art. 19). The basin of the lower Thames forms a deposit of clay, which is thus intermediate between two great lines of cretaceous formations.

The chalk range of the South Downs, which we have traced westward to the banks of the Avon near Salisbury (Art. 24), is prolonged on the west side of that river, in a general direction of south by west, (and under the designation of the Dorset Heights, in the county of that name,) to the neighbourhood of Beaminster. Horn Hill, near that town, is the western extremity of the chalk formation. From Horn Hill a range of chalk heights runs eastward, at a short distance from the coast, through the peninsula called the Isle of Purbeck, where it terminates in the cliffs of Ballard Down, opposite the Needles, in the Isle of Wight, fifteen miles further to the east. This range may be distinguished by the name of the Purbeck Heights. A line of chalk hills extends through the centre of the Isle of Wight, from the Needles, on the west, to Culver Cliff, on the east side: the highest point of this, Motteston Down, is 698 feet; but St. Catherine's Hill, in a detached range near the south point of the island, is 830 feet in height, and is the most elevated part of the island.

The chalk ranges of the South Downs and their western prolongation through Dorsetshire, on the one side, and those of the Purbeck Heights and the Isle of Wight, on the other, mark the limits of an extensive basin of clay, which embraces the south part of Hampshire, with the adjacent portions of Sussex and Dorsetshire, as well as the northern shores of the Isle of Wight. Towards the eastern part of this basin is Portsdown, an isolated mass of chalk, 447 feet in height. In its central part, between the Avon and the estuary of Southampton Water, is the high tract of the New Forest, a wooded district, which supplies abundance of oak and other valuable timber.

(26.) From the south-western extremity of Salisbury Plain, a succession of high grounds (not forming, however, any continuous range of great extent) may be traced westward along the borders of Somersetshire, dividing that county from the adjoining counties of Dorset and Devon. A portion of these have been already spoken of, under the name of the Dorset Heights. Further to the westward are the *Blackdown Hills*, on the borders of Somerset and Devon, which form the southern boundary of the Vale of Taunton.

In the most western part of Somerset, and the north of Devonshire, is *Exmoor*, a high tract of land of considerable extent, which measures about 20 miles from east to west, and about 12 from north to south. Dunkery Beacon, its highest point, is 1668 feet above the sea. The higher portions of Exmoor contain peat swamps of many acres in extent: it is almost destitute of trees, except on the banks of the rivulets by which it is watered, and which chiefly belong to the valley of the Exe. The whole tract forms an extensive sheep-pasture.

The high grounds of Exmoor, the Blackdown and Dorset Hills, Salisbury Plain, and the Marlborough Downs, with the southern and south-eastern slopes of the Cotswold Hills, enclose on three sides a considerable tract of country which belongs to the basin of the Bristol Channel, and watered by rivers which flow into that estuary. This district nearly

coincides with the limits of the county of Somerset, which has great variety of surface.

In the north part of Somersetshire are the *Mendip Hills*, which run in a general direction of east and west: their top forms a high flat, with a rapid slope on either side. The highest of the Mendip Hills is 1100 feet: they belong chiefly to the mountain limestone formation, and contain lead and calamine, as well as copper, manganese, and ochre.

To the south and south-west of the Mendip Hills is *Brent Marsh*, a low tract of land, which is naturally an immense swamp, but has been much improved by draining. It contains a great deal of peat, which furnishes fuel to the inhabitants. On the south of this marshy district are the Polden Hills, a range of trifling elevation; and further west, on the opposite side of the valley of the Parret, are the *Quantock Hills*, the highest parts of which are 1270 feet in elevation. The Quantock Hills are separated from the Blackdown Hills by the Vale of Taunton, a highly fertile tract.

(27.) The most eastern part of Devonshire, with the adjacent portion of the county of Dorset, extending westward from the termination of the chalk ranges, is a hilly tract, in which are some ranges of high land, of small extent; these stretch from the neighbourhood of the Blackdown Hills to the sea-coast, and fill up the tract watered by the rivers Axe and Otter. Pillesdon Pen, in the western extremity of Dorset, is 934 feet high.

The south-western extremity of England forms a peninsular region, the high grounds of which are divided from the rest of the island by the valleys of the rivers Exe and Tawe,—the former flowing into the English Channel, and the latter into Barnstaple Bay, at the entrance of the Bristol Channel. A straight line drawn from the town of Exeter to Baggy Head, on the north side of Barnstaple Bay, marks the north-eastern limit of the high lands of Devonshire and Cornwall, which attain a greater elevation than any other part of England to the south of the Trent.

The main mass of the Devonshire highlands consists of *Dartmoor*,—a plateau of irregular surface, which extends about 25 miles from east to west, and nearly the same distance in a north and south direction. Granite rock forms the nucleus of the entire region, and the principal elevations consist of huge masses of the same material. The highest point of Dartmoor—Cawsand Beacon (near its northern extremity, and 17 miles due west of Exeter)—is 1792 feet in elevation; Rippin Tor (15 miles south-west of Exeter) is 1549 feet; and the general elevation of the higher portion of the mountain plain is probably upwards of 1200 feet. The steepest ascent to the mountain region is on the south, and the rivers on that side form narrow valleys; on the north it sinks down with a gradual slope.

The high surface of Dartmoor is a wild and in most parts a barren tract, with very little grass, and the soil is in many places boggy. The granite is extensively quarried for building-stone. The hard limestone and slaty rocks which extend around the east, south, and west sides of Dartmoor (constituting what geologists designate as the Devonian formation) are rich in mineral productions, including tin, copper, lead, iron, and manganese, as well as other metals in smaller quantities. Excellent lime-
stone for building purposes, and also beautiful veined marble, are worked

in many places, chiefly near the south coast, and in the neighbourhood of Torbay.

(28.) The river Tamar, which forms the boundary between Devonshire and Cornwall, divides the highlands of Dartmoor from the elevated masses of the latter county, the higher portions of which consist also of granite. The *Cornish Highlands* stretch through the entire extent of the county, not forming a connected mountain chain, but a succession of elevated masses of land. The most extensive, and also the highest, of these is situated in the same parallel as Dartmoor: it contains the hill called Brown Willy, 1368 feet in height. The high granite plain upon which this is situated extends about ten miles from east to west, and six or seven miles from north to south, and has an average height of about 800 feet. It is a dreary waste, without trees, and, like Dartmoor, has a boggy soil upon its surface. The bottoms of the valleys are covered with bogs, in many places more than 12 feet deep, the lower part of which consolidates into peat.

In the more southern part of Cornwall, the highlands are of narrower extent, and form a single axis, which has a rapid slope towards the sea on either side. Hensbarrow, near St. Austell, is 1034 feet high. In the extreme south-west peninsula, between St. Ives and Mount's Bays, the mountains form several elevated masses, varying from 600 to 800 feet in height, and granite cliffs form the high promontory of the Land's End. The more eastern peninsula, which terminates in the Point of the Lizard, is composed of serpentine, a rock of volcanic formation.

The Cornish highlands are the chief seat of the production of tin and copper, the principal mines of which are situated in the western part of the county, in the district between St. Austell and the Land's End: the mines chiefly occur at the points where the hard limestones and clay-slates are intersected by the granite rocks. Lead is also worked, but not to any great extent. Granite is extensively quarried.

(29.) The southern portion of the Cheshire plain, and the valley of the Severn below Shrewsbury, divide the mountainous region of Wales from the rest of the island.

The *Welsh Mountains* consist neither of a single mountain range nor a succession of connected chains. They form rather an extensive mountain region, in some places spreading out into high plateaus intersected by deep valleys, and in others rising into peaks of considerable elevation, which constitute the summits of huge masses of highland. The highest elevations occur in general at a short distance from the west coast, on which side the mountains have a more rapid slope than on their eastern border. In South Wales, however, the most considerable elevations are in the ranges which run in an east and west direction, and which lie at some distance inland.

The highest of the Welsh mountains is situated near the north-western extremity of the system, where the extensive mass of Snowdon rises into three summits of nearly equal height, the most elevated of which is 3571 feet above the sea,—a greater elevation than is attained in any part of Great Britain to the southward of the plain between the Firths of Forth and Clyde. Both to the north and south of Snowdon are many summits which are from 2500 to above 3000 feet in height.

About twenty-seven miles to the s. by w. of Snowdon is Cader I'

2914 feet; to the eastward of a line joining these two points is an extensive area of country, comprehending the upper part of the valley of the River Dee, which is probably not less than 600 feet above the level of the sea, even in its lower portions, and in which numerous high summits occur. The south-eastern boundary of this high mountain region is formed by the Berwyn range, which bounds the valley of the Dee on the south, and in which the highest summits vary from 1000 to 2000 feet in height, and many rise above 2000 feet. The country lying between the western extremity of the Berwyn hills (near Cader Idris) and the high mass of Snowdon, embracing the county of Merioneth, presents the most varied surface in the whole of Wales. The rivers which descend from its western slope, falling into Cardigan Bay, run through narrow valleys, and form in their course a continual succession of rapids and cataracts. To the southward of Cader Idris a similar country extends along the shores of Cardigan Bay as far as the small river Ystwith.

In the country which extends around the eastern and southern sides of the high tract above described, the mountains are of less elevation, though they still cover the greater part of the surface; but the valleys here expand into greater breadth, and the Vale of Clwyd, watered by the river of that name, is a beautiful and fertile district, from 5 to 7 miles across. The hills which bound the east side of this valley descend in gentle swellings and undulations into the plain of Cheshire. The peninsula of Caernarvon has a range of hills—an offset from the Snowdon Mountains—running through its centre, but is low towards the shores, both on the eastern and western sides.

In lat. $52^{\circ} 28'$, at a distance of 10 or 12 miles from the shores of Cardigan Bay, is the extensive mass of Plinlimmon,—a huge mountain with three summits, the highest of which rises to 2463 feet. To the south and south-east of Plinlimmon, extending for a distance of about 30 miles, as far as a range called the Epynt Hills, is a mountain tract of a very desolate character, which forms the most extensive waste in Wales. It presents no regular chains, but a succession of rounded hills and depressions, the surface of which is covered with mosses and peat, resting upon clay. Some parts of it consist of extensive bogs, among which, however, are scattered tracts of pasture land, covered with thin herbage. The peat is extensively used as fuel by the neighbouring inhabitants. To the east of this high and desolate tract, the country is still hilly; but with more gentle declivities, and interspersed with wider valleys, which admit of cultivation. The hills of Radnor Forest, in the county of that name, are 2163 feet in height: this part of the country has a gradual slope eastward, towards the valley of the Severn, and is drained on the south by the river Wye and its tributaries.

The southern declivities of the Epynt Hills are divided by the valley of the Usk from the extensive range of the Black Mountains, or Forest Fawr, which contains the highest summits in South Wales. The mountains of this range are too steep and rocky to admit of cultivation, but are in general covered with herbage, and afford good sheep-walks. They derive their epithet of 'Black' from the dark appearance presented by the heath when out of blossom, and the dreary blackness of their general aspect. The highest summit of the chain, called the Van or Beacon of Brecknock (a few miles south of the town of that name), is 2862 feet above the level of the sea.

To the south of the chain of Forest Fawr are the mountains of Glamorgan, which consist of numerous high ridges stretching out in various directions; these, though not so elevated as the hills further to the north, present a more mountainous aspect, from the steepness of their declivities, the narrowness of the valleys, and the pointed peaks and narrow ridges with which the upper parts are crowned. Between the southern edge of this mountain tract and the Bristol Channel extends the *Plain* or *Vale of Glamorgan*, an undulating district, intersected by hills of gradual slope and small elevation: this plain extends on the east into the adjacent county of Monmouth, where it forms a low, flat tract near the coast, and is only preserved from the inundations of the sea by embankments of great extent. This level region is extremely fertile.

To the west of the Plain of Glamorgan, the country adjacent to the coasts of Caermarthen and Pembroke, and extending for some miles inland, has also a gently undulating surface. Around the northern shores of Caermarthen Bay are some low, marshy tracts, in part of which salt is produced by evaporation. The peninsula of Gower, situated between Swansea Bay and the estuary called Burry River, is chiefly level, and resembles the Plain of Glamorgan.

(30.) The greater part of the Welsh mountains consists of rocks which geologists designate as the Upper and Lower Silurian formations, and is composed of hard limestones and shales, with variously coloured sandstones. The Lower Silurian (or, as they are called by some writers, Cambrian) strata occupy all the central and western part of the mountain region; these are frequently of slaty texture, and slate-quarries are worked in many parts of this tract, chiefly in the counties of Caernarvon and Merioneth. The only metallic ores which occur in these rocks are lead and cobalt, both in small quantities, and also copper, towards the northern part of the province. But both at the north-eastern and southern extremities of the mountain region are extensive formations of carboniferous limestone, in which are valuable mineral deposits, including coal and iron, and also lead, copper, zinc, and other metals.

The coal-field of North Wales extends from the Point of Aire (at the mouth of the Dee) through the county of Flint and into Denbighshire: it is of small extent, not more than seven miles across in its broadest part. Lead is very extensively worked in this region, and some silver is also extracted from the ore.

The South Wales coal-basin extends from the centre of Monmouthshire on the east, to St. Bride's Bay, in Pembrokeshire, on the west,—a length of more than 90 miles, divided into two portions by the broad indentation of Caermarthen Bay. The average breadth of the eastern and larger portion of the basin is from eighteen to twenty miles; that of the western portion, which forms a narrow belt through the south part of the county of Pembroke, only from three to five miles.* Its total area is about 1200 square miles.

* In this vast coal-basin of South Wales there are twelve beds of coal from 3 to 9 feet thick, and eleven more from $1\frac{1}{2}$ to 3 feet thick, being equal together to a solid mass 95 feet thick, besides a number of smaller beds. Taking the average length and breadth of these seams of coal, they would include an area of 1000 square miles, containing 95 feet of coal in

(31.) *Islands.* — The island of *Anglesey*, separated from the mainland by the deep and narrow channel of the Menai Strait, is 20 miles in length from north to south, and 22 miles from east to west: including the adjacent Holy Island, it has an area of 271 square miles. The surface of Anglesey is generally level, with a few gentle risings: in the northern part, the Parys Mountain reaches 473 feet in height. The whole island is rich in mineral productions, and copper ore is found within a few feet of the surface, forming, in some places, a mass or bed of considerable thickness. In the Parys mountain, both copper and lead ores are abundant, and also sulphate of copper and native sulphur. In the eastern part of the island there is a small but productive coal-field.

Holy Island (on which is the town of Holyhead), to the west of Anglesey, is elevated in its north-western part, and the highest point is more than 700 feet above the sea-level. It is united to Anglesey by two long embankments, over which the coach-road, and also the line of the Chester and Holyhead railway, are carried.

(32.) The *Isle of Man*, situated in the Irish Sea, midway between the shores of Great Britain and Ireland, is 30 miles in its greatest length, and has an average breadth of about 10 miles; its area is 220 square miles. The interior of this island is high, a range of hills running through it in a n. e. and s. w. direction; the most elevated summit, called Snea-field, nearly in its centre, is 2004 feet in height. Its extreme northern portion, however, is low, and consists of tertiary formations. Owing to the central position of this island, all the different portions of the British Archipelago, — Ireland, Scotland, England, and Wales, — can be seen from its hills in clear weather.

The Isle of Man is rich in mineral productions, which embrace lead, copper, silver, iron, and manganese, as well as good slate and building-stone. The lead ore is that chiefly worked, and copper, iron, and tin, to a smaller extent. Of the total area of the island, about 140 square miles are fit for tillage, the remainder consisting of hill, common, and waste land. The Calf of Man is a small rocky island off the south-west extremity of the larger island: some sheep are reared, and turnips grown, on its surface.

(33.) Off the north-west coast of Devonshire, at the entrance of the Bristol Channel, is *Lundy Island*, about $2\frac{1}{2}$ miles in length: it consists of a mass of granite which rises to 200 feet above the sea.

The *Scilly Islands* are a numerous group of small islets and rocks situated about 30 miles to the s. w. of the Land's End; they embrace together an area of between 7 and 8 square miles. The largest of the group, St. Mary's, is about $2\frac{1}{2}$ miles long, and between 9 and 10 miles in circumference. Only six of the number are inhabited: the crops grown are potatoes, barley, peas, and oats. Cattle are also reared, and many of the people are engaged in fishing. These islands were formerly celebrated for their produce of tin, but no mines are now worked.

Nine miles south of the entrance to Plymouth Sound, in the western part of the English Channel, is the Eddystone Rock, on which is a celebrated lighthouse.

twenty-three distinct strata, which will produce, in the common way of mining, 64,000,000 tons per square mile.

(34.) The *Isle of Wight*, off the south coast of England, measures nearly 23 miles from east to west, and 13 from north to south: its area is 135 square miles. The surface of this island is in general considerably elevated above the level of the sea, and the central parts belong to the chalk formation, as already described (Art. 25). The soil consists of a stony loamy earth, and is throughout extremely fertile.

(35.) The islands of *Thanet* and *Sheppey* may be regarded as almost a part of the mainland,—the former especially, since it is only divided from the rest of Kent by the channel of the River Stour, the western branch of which,—anciently a wide stream, called the River Wantsum,—is now nearly dried up, and forms only an insignificant watercourse. The Isle of Thanet is throughout level, and extremely fertile; it terminates to the east in the high chalk-cliffs of the North Foreland.

The Isle of Sheppey is divided from the mainland by the River Medway, and a branch of that river called the East Swale, which leaves the main channel a short distance above its mouth. The island is about 9 miles long and 3 broad: it is of tertiary formation, and on the north coast are cliffs which abound in pyrites, and from which coppers are extensively extracted. The south part of the island is low and marshy.

(36.) Off the south and east coasts of Essex are several islands of considerable size, separated from the mainland by narrow channels: the largest of these are Canvey Island, in the estuary formed by the mouth of the Thames; Foulness and Wallsea, to the N. E. of Shoebury Ness (where the coast trends to the northward); and Mersea Island, further north, at the mouth of the River Blackwater. These islands are generally low, and the soil rich and fertile.

(37.) The small island of *Coquet*, off the mouth of the river of that name, on the coast of Northumberland, contains 7 acres of good pasture land, and abounds in rabbits.

The little group of the *Fern Islands*, further to the northward, embraces seventeen rocky islets, which are the resort of great multitudes of sea-fowl.

Holy Island, or *Lindisfarne*, still further north, is about 2 miles off the mainland, from which, however, it is accessible by carts at low water. It is 9 miles in circumference, and contains 1020 acres (about $1\frac{1}{4}$ square miles). The soil of one half of the island is little better than sand, and is stocked with rabbits; the other half is under cultivation.

(37.) *Rivers*.—The longest river of England and Wales (and likewise one of the largest in the area of its basin) is the Severn, which discharges its waters into the Bristol Channel, on the west side of the island. But, with this exception, most of the principal streams flow towards the east coast, and empty themselves into the basin of the German Ocean. This results from the fact that the highest elevations of the land are situated nearer the western than the eastern shores, so that the general slope of the entire island is directed from west to east.

In the north of England, the watershed between the river-bas-

the opposite seas is formed by ground of considerable elevation, and coincides with the principal axis of the Pennine Chain. But in the central, southern, and eastern parts, the watersheds are of trifling height, and can sometimes only be traced with difficulty,—the head-waters of the opposite streams frequently approaching within a short distance of one another. As we have already seen (Art. 24), neither the ranges of the Chiltern Hills, nor those of the North and South Downs, form lines of watershed, but are broken through by numerous river-valleys. The entire drainage of the Welsh mountain-system belongs to the western seas, the waters of the longer slope flowing to the s. e. and n. e. by the valleys of the Severn and the Dee, and those of the shorter and more rapid declivity into Cardigan Bay and the western extremity of the Bristol Channel.

(38.) The principal rivers of England and Wales, commencing on the east coast, from north to south, and proceeding round the island, are the following :

On the east side,—the Tyne, the Wear, the Tees, the Humber (formed by the junction of the Ouse and the Trent): the Witham, the Welland, the Nen, and the Great Ouse, all of which flow into the estuary of the Wash; the Yare, the Orwell, the Stour, the Colne, and the Blackwater; the Thames, which forms at its mouth a broad estuary, and receives also the waters of the Medway; and another river Stour, which flows through the county of Kent and enters the sea on the coast intervening between the North and South Forelands.

On the south coast the rivers have mostly short courses : the most considerable are the Avon (flowing past Salisbury), the Exe, and the Tamar; besides which are the Rother, the Ouse (of Sussex), the Adur, the Arun, the Itchin, the Anton, the Stour (of Dorsetshire), the Frome, the Axe, the Otter, the Teign, the Dart, and many others.

On the west side, the Torridge and the Tawe both flow into Barnetaple Bay; the Parret, the Bristol Avon, the Severn, the Wye, the Usk, and the Taff, into the upper portion of the Bristol Channel; the Neath and the Tawe, into Swansea Bay; the Towy, into Caermarthen Bay; the Teify, into Cardigan Bay; the Conway, the Dee, the Mersey, the Ribble, the Lune, the Kent, and the Derwent, into the Irish Sea; the Eden into the head of the Solway Firth.

Besides the above, there are a great number of smaller streams, by which every part of the land is watered: these may be best learnt by attentive study of the Map.

(39.) The lengths, and extent of drainage, of most of the principal, are exhibited in the following Table, in which they are classified in order of the seas into which they flow :

Rivers flowing into the German Ocean.

	Length in miles.	Area of basin in sq. Eng. miles.	Extent of Navigation, &c.
Tyne	70	1100	<p>Navigable to Durham. Navigable to Stockton. The Ouse is formed by the confluence of the Swale and Yore, or Ure: the Swale is navigable to Morton Bridge, near Topcliffe; and the Ure to Ripon. The Ouse afterwards receives the Nidd, the Wharfe, the Derwent, the Aire (navigable to Leeds), and the Don (navigable to a few miles below Sheffield). The Calder, a considerable tributary of the Aire, is navigable to Wakefield. The Trent is navigable to Burton; its principal tributaries are, on the left bank, the Dove and the Derwent (navigable to Derby),—and on the right, the Tame, and the Soar (navigable to Leicester). Navigable to Lincoln. Navigable to Stamford. Navigable to Northampton. Navigable to Bedford. The longest branch of the Yare is called the Wensum, and is navigable to Norwich, a little below which town it joins the proper stream of the Yare. A short distance above its mouth, the Yare passes through the small lake of Breydon Water, at the head of which it is joined by the River Waveney, navigable to Bungay. The Stour is navigable to Sudbury; for some miles above its mouth it forms a considerable estuary, at the entrance of which it is joined by the Orwell, the river upon which Ipswich stands. The Orwell is navigable to Stow Market; above Ipswich it is commonly called the Gipping. The upper part of the Thames is called the Ials: its chief affluents are the Cherwell, Thame, Colne, and Lea, on the <i>left</i> bank; and the Kennet, Wey, Mole, Darent, and Medway, on the <i>right</i>. The main stream of the Thames is navigable to Lechlade, 205 miles above its mouth. The Medway, which joins the Thames near its mouth, is a considerable stream, 60 miles in length, and is navigable to Maidstone: by a branch called the East Swale, it encircles the Isle of Sheppey. Steam-boats ascend the Thames to Hampton Court, 7 miles above Richmond, which latter place is the limit of the tide-water. Navigable to Canterbury: a branch thrown off to the left, near its mouth, forms, with the main stream, the Isle of Thanet.</p>
Wear	60	460	
Tees	75	744	
Humber { Ouse Trent	150 } 180 }	9550	
Witham	75	1050	
Welland	60	708	
Nen	85	1133	
Ouse (Great)	145	2960	
Yare	60	1160	
Stour (<i>Essex</i>)	55	430	
Thames	215	6160	
Stour (<i>Kent</i>)	55	310	

Rivers flowing into the English Channel.

	Length in miles.	Area of basin in sq. Eng. miles.	Extent of Navigation, &c.
Ouse	35	188	{ Navigable to near Cuckfield. Navigable to Houghton Bridge, 11 miles above its mouth.
Arun	41	315	
Anton or Test	20	460	{ The Anton falls into the head of the estuary called Southampton Water, which also receives the Itchin, on which Winchester stands. Navigable to Salisbury: near its mouth it is joined by the Stour, which flows past Blandford and Wimborne Minster, and has a course of 55 miles.
Avon (<i>of Salis- bury</i>)	70	1210	
Frome	43	330	{ This river forms at its mouth the inlet of Poole Harbour.
Exe	55	640	
Tamar	55	600	{ Navigable to Topsham, near Exeter. Navigable to near Launceston: at its mouth the Tamar forms the estuary called Plymouth Sound.

Rivers flowing into the Bristol Channel.

	Length in miles.	Area of basin in sq. Eng. miles.	Extent of Navigation, &c.
Parret	45	653	{ The Parret is joined on its right bank by the Yeo, navigable to Ilchester; and on the left bank by the Tone, navigable to Taunton. Navigable to Bath.
Avon (<i>of Bristol</i>)	65	900	
Severn	240	5540	{ The Severn rises on Plinlimmon, among the mountains of Wales, and begins to be navigable at Welshpool, 178 miles above its mouth. Its chief tributary on the right is the Teme, which joins it below Worcester: on the left bank it is joined by the Virnwy (on the borders of Wales), the Tern (below Shrewsbury), the Stour (at Stourport), and the Avon (at Tewkesbury). The Avon has its origin in the central plain of England, near the sources of the Welland and the Nen; it has a length of 90 miles, and is navigable to Stratford. Steam-boats ascend the Severn to Gloucester, which is also the limit of the tide-water.
Wye	120	1510	
Usk	70	630	{ The Wye rises on the s. e. slope of Plin- limmon, only a mile distant from the sources of the Severn, and is remarkable for the beauty of the scenery in the lower part of its course: it is navigable to Hay, on the borders of Wales.
Towy	70	506	
			{ The Usk rises on the northern slope of the Caermarthenshire Beacons, in the range of the Black Mountains, the highest ground of South Wales: it is navigable only to New- port, a few miles above its mouth. The tide ascends this stream to above Caermarthen.

Rivers flowing into the Irish Sea.

	Length in miles.	Area of basin in sq. Eng. miles.	Extent of Navigation, &c.
Teify	53	400	<p>Navigable to about 5 miles above Cardigan.</p> <p>The Dee flows from Lake Bala, the largest lake in Wales: at its mouth it forms a wide estuary, which at low water becomes a mere muddy expanse, through which the channel of the river preserves an insignificant course. The Dee is navigable to Chester, to which place the tide ascends.</p> <p>The Mersey is formed by the union of the Goyt and Tame, both of which flow from the high grounds of the Pennine chain: at its mouth it expands into a magnificent estuary, navigable for vessels of the largest size. On the right bank it receives the Irwell, which flows past Manchester; on the left side, at the head of the estuary, it is joined by the Weaver, which flows through the south part of the Cheshire plain, and is remarkable for the deposits of rock-salt, and the brine-springs, occurring in the district which it waters. The tide ascends the Mersey to Warrington.</p> <p>Navigable to Preston.</p> <p>Navigable to Lancaster.</p> <p>Navigable to Carlisle.</p> <p>The Derwent is the most interesting river of the Cumbrian mountain-region, and carries off to the sea the waters of several of the lakes of this district. The drainage of the high valley of Borrowdale is received into the lake of Derwent, whence the river flows into Bassenthwaite Lake. After leaving this, it receives at Cockermouth the waters of the Cocker, which is the outlet of the lakes of Crummock, Buttermere, and Lowes Water. The Greta, which joins the Derwent near the foot of Derwent Water, brings with it the waters of Thirlmere. The Derwent is only navigable for a mile above its mouth, which forms the harbour of Workington.</p>
Dee	90	862	
Mersey	70	1748	
Ribble	60	730	
Lune	53	430	
Eden	80	995	
Derwent	42	260	

We thus find that the great estuaries formed by the Humber, the Wash, and the mouth of the Thames, on the *east* coast, and the upper part of the Bristol Channel on the *west*, receive the greater part of the running waters of the island. The united area of the river-basins of the Wash (including the Witham, Welland, Nen, and Ouse) is 5850 square miles; and of the Severn, the Bristol Avon, the Wye, and the Usk, jointly 8580 miles: if we add to these the areas of the Humber and the Thames drainage, we have a total of 30,140 square miles, or more than half the entire superficial extent of England and Wales.

(40.) *Lakes*.—The only part of England in which lakes are numerous is the group of the Cumbrian Mountains. The largest of them, Windermere, is $10\frac{1}{2}$ miles in length and one mile in breadth; Ulleswater, the next in magnitude, is 8 miles long and about $\frac{1}{2}$ of a mile broad; and Coniston, the third in dimensions, has a length of $5\frac{1}{2}$ miles and an average breadth of $\frac{1}{2}$ a mile.

The smaller lakes found in the same region are Wast Water, Ennerdale, Buttermere, Crummock, Lowes Water, Derwent Water, Bassenthwaite, and Thirlmere,—all situated on the w. and n. w. slopes of the mountain tract: Hawes Water, which (as well as Ulleswater) lies on the n. e. side of the mountains; Rydal Water, Grassmere, and Esthwaite Water, in the valleys opening towards the south, which is also the direction of Windermere and Coniston. Nearly all of these are long and narrow, or else oval-shaped, bodies of water.

The principal lakes of the Cumbrian mountain region are exhibited in the following Table, with their dimensions, elevation above the sea-level, and the names of the streams by which their waters are carried off to the sea.

	Length.	Breadth.	Elevation.	
	Miles.	Miles.	Feet.	
Windermere . .	$10\frac{1}{2}$	1	116	{ Discharged by the River Leven into Morecambe Bay.
Rydal Water . .	$\frac{1}{2}$	$\frac{1}{2}$		{ Flows into Windermere, by River Rothay.
Grassmere . . .	1	$\frac{1}{2}$	180	{ Connected with Rydal Water by a small stream.
Esthwaite Water	$\frac{1}{2}$	$\frac{1}{2}$	198	{ Flows into Windermere, by a stream called Cunsey Beck.
Coniston . . .	$5\frac{1}{2}$	$\frac{1}{2}$	105	{ Flows by River Crake into Morecambe Bay, entering the estuary formed at the mouth of the Leven.
Wast Water . .	$3\frac{1}{2}$	$\frac{1}{2}$	160	{ Connected with the Irish Sea by the River Irt.
Ennerdale . . .	3	$\frac{1}{2}$		{ United with the Irish Sea by the River Ehen.
Buttermere . .	$1\frac{1}{2}$	$\frac{1}{2}$		{ Flows by a small stream into Crummock Water.
Crummock . . .	3	$\frac{1}{2}$	260	{ Discharged by River Cocker into the River Derwent.
Lowes Water . .	$1\frac{1}{2}$	$\frac{1}{2}$		{ Connected by a small stream with Crummock Water.
Derwent Water .	3	$1\frac{1}{2}$	288	{ Connected with Bassenthwaite Lake by the River Derwent.
Bassenthwaite .	4	$\frac{1}{2}$	210	{ Discharges by River Derwent into the Irish Sea.
Thirlmere . . .	$2\frac{1}{2}$	$\frac{1}{2}$	473	{ A stream called St. John's Beck flows from Thirlmere into the River Greta, which joins the Derwent at the foot of Derwent Water.
Ulleswater . . .	8	$\frac{1}{2}$	318	{ Discharges by the River Eamont into the channel of the Eden.
Hawes Water . .	$2\frac{1}{2}$	$\frac{1}{2}$	714	{ Connected with the Eamont by the River Lowther.

There are also many of smaller dimensions than the above, some of which are locally distinguished as *tarns*: many of these are situated at great elevations among the mountains. Windermere is in some parts 240 feet deep, and exceeds any of the others in depth, excepting Wast Water, which is 270 feet in its deepest part. The greatest depth of Ulleswater is 210 feet.

Numerous waterfalls occur in the lake district: the principal are *Scale Force*, beside Crummock Water, 190 feet high; Barrow waterfall, 124 feet, and Lowdore waterfall, 100 feet, both on the east side of Derwent Water. The river Tees forms a fine waterfall (called *Mickle Force*, 69 ft. descent), in the upper part of its course; and there are also falls in the Ure and other rivers which have their origin in the high districts of the Pennine mountain-chain. Several small cascades occur in the hilly parts of Devonshire.

(41.) Some small lakes or *meres* occur in the Fen District, the principal of which are Whittlesea Mere, Ramsay Mere, and Ugg Mere, all situated in the county of Huntingdon (Art. 21). The small lake of *Breydon Water*, near the mouth of the River Yare, has also been mentioned; a few miles to the south of it is *Lake Lothing*, which joins the river Waveney, and is also united to the sea by an artificial channel.

(42.) The largest lake in Wales is the *Lake of Bala*, or *Llyn Tegid*, out of which flows the River Dee: it is 4 miles long and about two-thirds of a mile broad, and has an average depth of 40 feet. *Llyn Conway*, the source of the river of that name, is 1 mile long by $\frac{1}{2}$ broad. The *Lakes of Llanberis*, on the n. w. side of the Snowdon group of mountains, consist of an upper and a lower lake, of which the former is 1 mile long and half a mile broad, and the latter $1\frac{1}{2}$ mile long, but very narrow. The upper lake is more than 400 feet deep. The lakes of Llanberis are distinguished for the beauty of their scenery; their water flows by the little River Seiont into the Menai Strait. But lakes are not generally numerous in the Welsh mountain system, and most of those which occur are of very small size.

The largest lake in South Wales is *Llyn Safaddan*, or *Brecknock Mere*, (to the s. e. of the town of Brecknock), about 3 miles long by 1 broad, and not more than 10 or 12 feet in average depth. It is situated in a comparatively low and level district.

Numerous waterfalls occur among the Welsh mountains, especially in the counties of Caernarvon, Merioneth, Montgomery, and Cardigan, which embrace the most varied and romantic scenery of the principality. The *Glasslyn Cascade*, among the Snowdon group, has a fall of 300 ft.; among the most celebrated, however, are the Falls of the little river *Mynach* (which joins the stream of the Rheidol, falling into Cardigan Bay), at a spot called the Devil's Bridge, the scenery around which is in the highest degree attractive.

(43.) *Geology and minerals*.—The geological formation of England and Wales is remarkably simple, the various strata of rocks occurring in general with great regularity, and successively overlying one another as we advance from the south-eastern extremity of the island in a north-west direction. With these changes in the character of the rocks below the surface of the ground is observed the occurrence, at varying intervals, of soils of the most opposite character, consisting alternately of clays, sands, chalk, and various kinds of limestones.

The following Table exhibits the succession of the principal strata, commencing with the uppermost, or those of most recent date (which lie chiefly on the eastern side of the island), and disregarding the minor differences by which the various systems of rocks are subdivided :

- | | | |
|--------------------------------------|---|--|
| Tertiary
fossiliferous
strata. | { | 1. <i>Alluvium</i> , or <i>alluvial beds</i> , consisting of sand and mud deposited near the mouths of rivers. |
| | | 2. <i>Crag</i> , and various <i>freshwater and marine formations</i> , consisting of different clays, sands, gravel, and marl, with (in some cases) imbedded shells and corals. |
| | | 3. <i>London clay</i> , consisting of lead-colour or blue clay, containing nodules of cement-stone. |
| | | 4. <i>Plastic clay</i> , containing blue, yellow, and white clays, with sands and flint pebbles. |
| Secondary fossiliferous strata. | { | 5. <i>Chalk</i> , divided into upper and lower chalk, and chalk marl: the two former of these consist of various kinds of chalk, with beds and nodules of flint. |
| | | 6. <i>Green-sand</i> , divided into upper green-sand, gault, and lower green-sand: the upper and lower green-sand consists of various sands and sandstone, with beds of chert and limestone, and the gault of dark blue clay with numerous concretions. The chalk and green-sand form together the <i>Cretaceous system</i> . |
| | | 7. <i>Wealden</i> , consisting of clay and iron-sand, with Petworth marble and Purbeck limestone. |
| | | 8. <i>Oolitic system</i> , embracing upper, middle, and lower oolite, and lias; the three former of which consist of various shelly limestones, clays, and sand, with beds and nodules of chert, and (in the lower oolite) fuller's earth. The lias consists of blue slaty marl or clay, with beds of limestone, and is remarkable for the large fossil remains of reptiles which have been found in it. |
| | | 9. <i>New Red sandstone</i> , composed of variegated marls and sandstones, and including gypsum, with beds of rock-salt and brine-springs (Art. 16). |
| | | 10. <i>Magnesian limestone</i> , consisting of yellowish limestone, with marls, and forming an excellent building-stone. |
| | | 11. <i>Carboniferous system</i> , embracing coal, millstone grit, and mountain or carboniferous limestone. The millstone grit consists of a coarse-grained gritty sandstone, which supplies flagstones and grindstones: the mountain limestone is composed of blue or reddish compact limestone, with Derbyshire marble, containing ores of lead and calamine, and sometimes alternating with beds of shale, chert, and gritstone. |
| | | 12. <i>Old Red sandstone and Devonian rocks</i> , the former consisting of sandstones and red marls,—the latter of gray sandstone and shales, with slaty limestones, embracing black and veined marbles, with numerous minerals (Art. 27). |
| | | 13. <i>Primary fossiliferous strata</i> .— <i>Silurian and Cambrian rocks</i> , embracing various slaty limestones, with dark shales and flagstones. |

The *alluvial deposits* occur chiefly along the estuaries of the Trent, Severn, Thames, and other rivers, and comprehend the district of the Fens and the low tract of Brent Marsh, in Somersetshire (Arts. 21, 26).

The *crag and freshwater formations* occur on the coasts of Norfolk, Suffolk, and Essex, and in the northern part of the Isle of Wight.

The London and Plastic clays form two great basins, enclosed by the chalk formations: one of these extends from the south-western part of Berkshire eastward to the shores of Essex and Suffolk, including the lower Thames and its tributaries. The other occupies the southern part of Hampshire, and portions of the adjacent counties on either hand (Art. 25). On the borders of Surrey and Berkshire, and also in some other places, the London clay is overlaid by a formation called the Bagshot sand, which consists of siliceous sand and sandstone.

The Cretaceous formations (chalk and green-sand) consist of two portions,—the smaller of which embraces the Wolds of Yorkshire and Lincolnshire. The larger extends from the coast of Norfolk, in a s. w. direction, across the basin of the Thames, to the shores of the English Channel, and in the neighbourhood of Salisbury Plain and the north of Hampshire throws off to the eastward the two great lines of the North and South Downs. It also extends through the centre of the Isle of Wight. The chalk is the most extensive of the British strata, and occupies portions of all the eastern, and many of the southern and south-midland, counties.

The Wealden formation is chiefly confined to the district of the Weald (Art. 24), and to a small portion of the Isle of Purbeck and the southern shores of the Isle of Wight.

The Oolitic formations form a broad belt which stretches in a general n. e. and s. w. direction through the central parts of England; beginning on the coast of Yorkshire, they extend thence, through the midland counties, to the shores of the Channel in the western portion of Dorsetshire. The *lilas* rocks are throughout situated to the westward of the proper oolites.

The New Red Sandstone commences on the coast of Durham, and extends over the lower part of the Tees basin and along the course of the Swale, the Yorkshire Ouse, and the river Trent: it occupies the greater part of the Trent basin and stretches thence into the Cheshire Plain, embracing the valley of the river Weaver; some smaller and partly detached portions extend southward to the shores of Devonshire, near the mouth of the Exe. There is also a considerable detached portion which embraces the valley of the river Eden and the shores of the Solway Firth.

The Magnesian Limestone is a narrow belt which stretches through the county of York and along the borders of Nottingham and Derby; there is also a detached portion in the eastern part of Durham.

The Carboniferous formations occupy a great part of the northern counties, embracing the whole region of the Pennine Chain, and the western portion of the York Plain; besides numerous detached portions in North and South Wales, and several of the midland, western, and southern counties. (The coal-fields are subsequently enumerated.)

The Devonian rocks (including the Old Red Sandstone) are extensively developed in the west and south-west of England (Art. 27), and in the counties of Brecon, Caermarthen, and Pembroke, in South Wales.

The Silurian and Cambrian rocks occupy the greater part of Wales, and also the higher regions of the Cumbrian mountain group (Arts. 15 and 30). They likewise form the principal rock in the Isle of Man.

Besides the above are various rocks of a crystalline texture, such as granite, porphyry, and many others of igneous origin. These, however, only occur sparingly in England, though much more extensive in the northern part of Britain, where they cover large spaces (Art. 81).

Minerals.—The mineral productions of England and Wales have been already mentioned, and their great abundance described (Art. 4).

The following is a list of the principal coal-fields.

1. *The Northumberland and Durham coal-field*, in the counties of those names.
2. *The Whitehaven coal-field*, in the western portion of Cumberland.
3. *The South Lancashire coal-field*, stretching across nearly the whole of the southern part of that county.
4. *The Leeds and Nottingham coal-field*, extending through the south part of Yorkshire into the counties of Derby and Nottingham.
5. *The Leicestershire coal-field*, occupying the n. w. part of the county, in the neighbourhood of Ashby-de-la-Zouch.
6. *The Warwickshire coal-field*, extending from the neighbourhood of Coventry to the northern extremity of the county.
7. *The North Staffordshire coal-field*, extending over the district of the Potteries (Art. 57).
8. *The South Staffordshire or Dudley coal-field*, extending from the neighbourhood of Birmingham and Dudley, northward towards the banks of the Trent.
9. *The Shropshire coal-field*, consisting of some detached portions, the principal of which is situated in the neighbourhood of Coalbrook Dale (s. e. of Shrewsbury), in the valley of the Severn, on both sides of which the coal formation occurs.
10. *The Dean Forest coal-field*, in the district of that name, to the west of the lower course of the Severn (Art. 23.)
11. *The Bristol coal-field*, the most southern in the island, consisting of several small and detached portions in the counties of Gloucester and Somerset, on either side of the Bristol Avon.
12. *The North Wales or Flintshire coal-field*, in the counties of Flint and Denbigh, extending on both sides of the estuary of the Dee.
13. *The Anglesey coal-field*, of small extent, in the island of that name.
14. *The South Wales coal-field*, extending through the counties of Glamorgan, Caermarthen, and Pembroke (Art. 30.)

Iron ore is abundant in nearly all the above districts. The localities in which iron is most extensively made are South Wales, Staffordshire, Shropshire, Yorkshire, North Wales, Derbyshire, the n. w. part of Durham, and the adjacent portion of Northumberland. Of the total quantity worked, the South Wales coal-field supplies nearly one-half. Iron-sand is also very abundant in the weald of Sussex and Kent (Art. 24), and iron was formerly extensively worked in that district; but the superior advantages possessed by the coal districts, in the immediate proximity of the fuel required for smelting the ore, have caused the iron-works in this locality to be long since abandoned.

Copper is most abundant in Cornwall, and also occurs in Devonshire, the Isle of Anglesey, and Staffordshire. All the Cornish copper ore is carried to Swansea to be smelted.

Lead occurs chiefly in Derbyshire, Northumberland, Cumberland, North Wales (in the counties of Flint and Denbigh), in South Wales, and in Devonshire. *Zinc* is also obtained from the sulphuret of zinc associated with the lead, but is most extensively obtained from calamine, its proper ore, mines of which are worked in Derbyshire.

Tin occurs only in the counties of Cornwall and Devon, chiefly the former, in which this metal has been worked from the earliest ages.

A small quantity of *silver*, chiefly extracted from the lead ore, is found in the counties of Cumberland, Derby, and Flint: its produce is, however, too small to be of any commercial importance.

Salt occurs chiefly in the county of Cheshire, in the valley of the River Weaver, already mentioned (Art. 16). Brine-springs also occur at Droitwich, in Worcestershire, and at some places in the county of Durham. All of these are situated in the new red sandstone formation.

Limestone is abundant in almost every part of England and Wales. The best kinds of *building-stone* are obtained from a narrow belt of the magnesian limestone formation, which extends from north to south through the counties of York, Nottingham, and Derby, and which is extensively quarried for the purpose. Stone of excellent quality is also worked in the district called the Isle of Portland (in the south part of Dorsetshire), which belongs to the eolitic formation, in many other parts of which quarries are likewise formed. **Slate** is chiefly obtained in the regions of the Cumbrian and Welsh mountain systems (Arts. 15, 30).

(44.) *Mineral Springs*.—Springs impregnated with saline compounds occur at Epsom, (in the county of Surrey); at Cheltenham, and Clifton, near Bristol (in Gloucestershire); at Bath (Somerset); Leamington (Warwick); and Buxton and Matlock (both in Derbyshire).

Chalybeate waters, that is, springs impregnated with iron, are found at Tunbridge-Wells (Kent), Brighton (Sussex), Cheltenham (Gloucester), Great Malvern (Worcester), Harrowgate and Scarborough (Yorkshire), and at Hartlepool (Durham). The waters at Harrowgate, Cheltenham, and Leamington, are also partly sulphureous.

The only warm springs which occur in England are at Bath, Clifton (near Bristol); and at Buxton, Bakewell, Stoney Middleton, and Matlock, all in Derbyshire. The highest temperature of the Bath waters is 117° , of those at Clifton 74° , Buxton 82° , and Matlock about 69° . Near Cardiff, in the county of Glamorgan (South Wales), is a warm spring, the temperature of which is 21° above that of the place, and which contains saline ingredients.

(45.) *Climate*.—The general character of the climate of the British Islands has been already described (Art. 3).

The lowest average of winter temperature, about 35° or 36° , is found on the east coasts of England and southern Scotland, embracing the district which extends from the Naze, in Essex, to the Firth of Forth, and within which the coldest portion of the kingdom is consequently situated.

The highest average of summer temperature, about 64° , is experienced in the south and south-west portions of England, which are the warmest parts of the kingdom. On the south coasts of Devonshire the climate is so mild that the myrtle flourishes in the open air all the year round; and the shores of Cornwall and South Wales exhibit the same kind of climate, though in a less striking degree.

The mean annual temperature, the mean temperature of the different seasons, and also the difference between the means of summer and winter, at several places in Great Britain are shown in the following Table. The places are arranged in the order of their occurrence from south to north, beginning with the southern extremity of Cornwall.

	Mean temp. of winter.	Mean temp. of spring.	Mean temp. of summer.	Mean temp. of autumn.	Mean temp. of year.	Difference of summer and winter.
Penzance	44°23	49°31	60°91	52°67	51°78	16°68
Falmouth	42°31	48°47	58°45	51°83	50°37	16°14
Truro	41°08	51°37	58°37	52°10	50°87	16°74
Plymouth	44°88	49°68	60°87	52°91	52°09	15°99
Exeter	36°33	45°38	57°67	47°67	46°75	21°34
Gosport	40°97	50°14	62°74	53°44	51°82	21°77
Chichester	38°85	47°76	60°78	50°64	49°51	21°93
Bristol	40°33	50°33	64°33	51°67	51°67	24°
Swansea	45°50	49°67	63°67	56°00	53°71	18°17
London	39°50	49°06	62°93	51°83	50°83	23°43
Oxford	37°	47°17	60°37	50°03	48°64	23°37
Cheltenham	40°66	50°28	64°33	50°96	51°54	23°72
Bedford	40°51	51°10	62°68	52°25	51°64	22°17
Malvern	40°	41°53	60°	49°45	47°74	20°
Derby	36°33	44°67	54°33	44°33	44°92	18°
Boston	37°74	48°24	61°98	48°54	49°12	24°24
Liverpool	41°30	49°26	61°14	51°52	50°80	19°84
Manchester	38°33	47°37	59°80	49°73	48°81	21°47
Bolton	38°80	47°93	60°50	49°37	49°15	21°7
York	36°28	49°37	62°27	48°63	49°16	26°08
Lancaster	37°08	44°21	56°63	47°32	46°36	19°75
Kendal	37°04	45°83	57°79	47°52	47°05	20°75
Whitehaven	39°9	47°03	59°64	49°77	49°09	19°74
Keswick	37°53	46°51	58°6	47°48	47°28	21°07
Carlisle	37°25	45°40	57°39	47°76	46°97	20°14
Dunfermline	36°66	43°03	55°19	46°01	45°23	20°53
Dundee	41°39	49°89	68°47	53°03	51°94	22°08

More rain falls in the western parts of England and Wales than in the eastern districts, and more in the hilly than in the level portions of the island. The average quantity which falls annually at a few principal localities is stated below:

At Hastings	28 inches.	At Coniston	85 inches.
Dover	30 "	Bolton	47 "
London	21 "	Manchester	36 "
Cambridge	20 "	Liverpool	35 "
Norwich	25 "	Swansea	35 "
Bedford	27 "	Cheltenham	32 "
Derby	27 "	Bristol	30 "
York	23 "	Salisbury	35 "
Shields	25 "	Exeter	36 "
Carlisle	30 "	Plymouth	40 "
Whitehaven	52 "	Falmouth	40 "
Keswick	70 "	Penzance	41 "
Kendal	56 "		

The prevalent winds in our country are from the westerly quarters of the heavens: these are warm, and (the south-west winds especially) frequently accompanied by moisture. The north, north-east, and east winds are cold and generally dry: those between west and north are of mixed character. On a comparison of the number of days in the year upon which westerly and easterly winds have been found to blow, during a long period of observation, it appears that the westerly winds exceed the

easterly in the proportion of 225 to 140; and that the northerly exceed the southerly as 192 to 173. South-west winds prevail most in the months from June to December (inclusive); north-east winds are of most frequent occurrence in the months between January and May (inclusive). The prevalence of these cold winds in spring constitutes, indeed, the chief defect in the climate of Great Britain, and frequently operates as a check to the operations of agriculture. The general character both of the *vegetation* and *zoology* of the British Islands resembles that of the adjacent portions of the continent. (Art. 5.) There are, indeed, many local peculiarities in the development of each of these departments of the natural world. Thus the south-west, the south-east, the eastern, and the western districts of England, are each the peculiar seat of plants not found in other parts of the island, and some even are confined in their range to single counties. But these are generally of small size, chiefly grasses, heaths, and various wild flowers; and, though interesting to the naturalist, they are not otherwise important.

(46.) *Forests*.—Owing to the extension of cultivation, and the increasing demand for timber, the woodland districts of England are by no means so extensive as formerly, and bear but a very small proportion to the whole surface of the country. In the Roman and Saxon times an almost uninterrupted forest stretched through the central parts of England, from the banks of the Thames, across the course of the Trent, and through the great York plain nearly to the borders of Scotland. Another great forest region embraced the district of the Weald, in the counties of Kent, Sussex, and the adjacent parts of Surrey and Hampshire. But the greater part of these forests have now disappeared.

The districts at present most extensively covered with wood are the New Forest (*Hampshire*), Dean Forest (*Gloucester*), Whittlebury and Salcey Forests (*Northampton*), Alice Holt, Woolmer, and Bere Forests (all in the eastern part of *Hampshire*), Wychwood Forest (*Oxfordshire*), Hainault (or Waltham) and Epping Forests (*Essex*), Windsor Forest (*Berks*), Delamere Forest (*Cheshire*), and Sherwood Forest (in the county of *Nottingham*).

Besides the above, are many other tracts which still retain the name of forest, though now only thinly covered with trees, and in some instances entirely cleared of timber; and some of these possess considerable interest as the scenes of historical or legendary events. The principal of them are Rothbury Forest (*Northumberland*); Inglewood Forest (*Cumberland*); Martindale Forest (*Westmoreland*); Lune, Stainmoor, and Bowland Forests (*Yorkshire*); the district of Wyredale (*Lancashire*); Needwood Forest and Cannock Chase (*Stafford*); Charnwood Forest (*Leicester*); the Forest of Wyre (*Worcester*); the Forest of Arden (*Warwick*); Rockingham Forest (*Northampton*); Enfield Chase (*Middlesex*); St. Leonard's, Tilgate, and Ashdown Forests (*Sussex*); Savernake Forest (*Wilts*); Cranborne Chase (on the borders of Wilts and Dorset); Selwood Forest (*Somerset*); Exmoor Forest (in the western part of the same county); and Dartmoor Forest (*Devon*).

(47.) *Inhabitants*.—The population of England and Wales, according to the census taken in 1841, was as follows:

England	.	.	.	14,995,188	} Total . . . 15,908,741
Wales	.	.	.	911,603	

At the present time (1850), the number is probably not less than 18,000,000,—an average of 315 to a square mile. The average population according to the census of 1841 was 302 inhabitants to a square mile in England, and 122 in Wales.

The population is very unequally distributed; Wales is thinly inhabited throughout, and only two of its counties have more than 200 inhabitants to the square mile. These are Flint and Glamorgan, each the seat of coal and other mineral deposits. The county of Merioneth has only 59 inhabitants to the square mile.

The least populous of the English counties is Westmoreland, which has only 74 inhabitants to the square mile, though some districts in the mountainous portions of Northumberland have even a still smaller ratio of population; the south-east part of Northumberland, in the neighbourhood of Newcastle, and also the adjoining portion of Durham, are, however, thickly inhabited. Cumberland has 116, and the district of Furness (which belongs physically to the region of the Cumbrian mountains, though forming a detached part of the county of Lancaster,) 124 inhabitants to the square mile. The North Riding of Yorkshire has a ratio of only 103 inhabitants.

The counties of Middlesex and Surrey, which contain London, the metropolis of the empire, are the seats of the most dense population: Middlesex has 5590, and the eastern division of Surrey 1764, inhabitants to the square mile.* Next in order of populousness are Lancashire and the West Riding of Yorkshire, which have respectively 944 and 448 inhabitants to the square mile on their total average, and a much higher ratio in certain portions. The southern division of Lancashire, which embraces one of the most considerable coal-fields and includes the large towns of Manchester and Liverpool, has 1775 inhabitants to a square mile, and the district round Halifax, in the West Riding of Yorkshire, 1108.

Of the mineral counties, those which include or adjoin the principal coal-fields are all the seat of a considerable population: Durham has 298 inhabitants to a square mile, Stafford 431, Cheshire 379, Derby 264, Nottingham 288, Leicester 267, Warwick 448, Worcester 309, Gloucester 343. These, with Lancashire, the West Riding of Yorkshire, and the metropolis, embrace the principal seats of manufacturing industry. The counties of Devon and Cornwall, the population of which is scattered, and chiefly confined to the immediate neighbourhood of the mines,—and which embrace moreover a large proportion of unproductive moorland,—have respectively 207 and 256 inhabitants to the square mile.

In England, therefore, the great centres of population are—London;—the country around and between Manchester and Liverpool, in South Lancashire;—Leeds, in the West Riding of Yorkshire;—Birmingham, and the adjacent parts of the counties of Warwick, Worcester, and Stafford;—and Newcastle, within the Northumberland and Durham coal-basin. In Wales, Merthyr Tydvil and the adjacent part of Glamorganshire, within the limits of the great coal-basin of that district.

* The average for the whole of Surrey is 766 to the square mile, but the western division of the county is almost wholly an agricultural district.

(48.) *Industrial occupations.*—Every branch of industry for which the climate and natural resources of the country render it adapted is extensively pursued in England. Until the latter part of the preceding century, agricultural pursuits engaged the attention of the larger proportion of the labouring population, and constituted the characteristic feature of the national industry. But since the establishment and rapid growth of the cotton manufacture, the proportion of the inhabitants engaged in manufacturing and commercial pursuits has been steadily increasing.

The actual number of the total population engaged directly in manufactures and trade is in England 16·9 per cent., and in Wales 9·9 per cent.; of those engaged in agriculture, in England 7·7 per cent., and in Wales 11·4 per cent. In England, therefore, manufactures and commerce are the characteristic pursuits of the labouring population, while in Wales agriculture predominates. England is, indeed, at the present time essentially a manufacturing and commercial country.

(49.) *Agriculture.*—The proportions of cultivable and uncultivable land in the whole of England and Wales are estimated to be as follows:

<i>In England.</i>		Acres.
Cultivated		25,632,000
Capable of cultivation . .		3,454,000
		<hr/> 29,086,000
Unproductive land . . .		3,256,400
		<hr/>
Total.		32,342,400
<i>In Wales.</i>		Acres.
Cultivated		3,117,000
Capable of cultivation . .		530,000
		<hr/> 3,647,000
Unproductive		1,105,000
		<hr/>
Total.		4,752,000

The total quantity of cultivable land in England is thus about 29,000,000 acres, estimated to be capable, under a proper system of agriculture, of affording support to a much larger population than the country at present contains.

In England, of the land in cultivation, the proportion under tillage and in gardens is about 10,500,000 acres, and that consisting of meadows, pastures, and marshes, 15,500,000 acres. In Wales, only 900,000 acres are under tillage, and 2,250,000 in pasture.

The districts in which *tillage*, or arable husbandry, is pursued, are chiefly on the east and south-east portions of the island, and embrace the counties of Kent, Essex, Suffolk, Norfolk, Hampshire, Berkshire, Bedford,

Surrey, Sussex, Hertford, parts of Yorkshire and Lincolnshire, with Durham and Northumberland.

The principal *dairy* counties (from which butter, cheese, and other farm produce are derived) are Cheshire, Shropshire, Gloucester, Wiltshire, Buckingham, Essex, York, Derby, Cambridge, Dorset, and Devon. The counties most distinguished for breeding and fattening cattle and sheep are Lincoln, Somerset, Leicester, Northampton, with the districts of Teesdale in Durham, and Cleveland and Holderness in the North and East Ridings of Yorkshire. In Wales, sheep and cattle (including numerous goats) are pastured on the hills, and tillage and dairy husbandry carried on in the valleys.

The counties in which the largest proportion of the inhabitants are engaged in agriculture are Lincoln, Rutland, Essex, Hereford, Huntingdon, Wiltshire, Buckingham, Suffolk, Cambridge, the North Riding of York, Bedford, and Berkshire. All of these are essentially agricultural counties. In Lincolnshire, the proportion of the population engaged in agriculture is 15·9 per cent., and in the above counties in general it is from 10 to 14 per cent. In Middlesex, on the other hand, only 1·1 per cent. of the inhabitants are thus engaged, and in Durham, Surrey, and the West Riding of Yorkshire, the proportion is only 4·4, and in Lancashire 6·7 per cent.

The agricultural produce of England is very considerable. Wheat forms the principal crop, and constitutes nearly one-half of the total value; next in importance are oats (and with them beans): barley and rye are grown to a smaller extent, and the latter is not so common now as formerly. Potatoes, turnips, rape, clover, hops, and garden fruits and vegetables, are raised in very considerable quantities. Wheat is most extensively cultivated in the south-east, barley chiefly in the eastern and midland counties, and oats in the fen districts and also in the north. Hops are chiefly cultivated in the counties of Kent, Surrey, Worcester, and Hereford.

The potatoe is very largely grown in Lancashire, Cumberland, and Cheshire, and the turnip in Norfolk. Rape is much cultivated in Lincolnshire and Cambridgeshire; both hemp and flax are grown to a small extent in the counties of Lincoln and Suffolk. Garden vegetables are most extensively grown in the metropolitan county, and in the neighbourhood of the large towns in general. Apple, pear, plum, cherry, and apricot trees, with other productions of the orchard, are very generally diffused, but the counties of Hereford and Devon are especially distinguished by the extensive cultivation of the apple, from which great quantities of cider are made.

Husbandry has of late years made great progress, owing chiefly to an extended system of drainage, and the increasing use of artificial manures, including *guano* (which is now brought for the purpose from distant parts of the globe), with town-refuse and sewage, &c. Great advantages have also resulted from the facilities presented by railways for the supply of lime and other materials of agriculture, and also for the transmission of the produce to market. One consequence of this has been the great extension of market-gardening, and the increasing use by the town population of the ordinary vegetable productions of the rural districts.

(50.) *Manufactures.*—Great Britain is unequalled by any country in the world in the immense amount and variety of

her manufactured products, the skill and ingenuity of her artizans, and the wonderful contrivances of the machinery by which their labours are assisted.

The great manufactures are those of woven and felted materials, and metals or hardware; and of these, cotton, wool, and iron, are by far the most important. Next in importance are the manufacture of leather, silk, linen, glass and earthenware, watches and jewellery, paper, and hats. The various manufactures of beer, spirits, soap, candles, with the different branches of the timber and building trades, ship-building, turnery, coach-making, musical instruments, &c. are also carried on to a considerable extent, and employ the labour of great numbers of the people. The manufacture of various articles from india-rubber, and also from the substance called gutta-percha, both of recent introduction, may be referred to as examples of the readiness with which the skilled labour of our artizan population adapts itself to every material presented to the exercise of its industry.

The *cotton manufacture* has its chief seat in Lancashire, Cheshire, and the neighbouring counties of the north midland district. In 1847 the number of cotton factories was nearly 2000, in which more than 277,000 persons were engaged: four-fifths of the total amount of power employed is, however, supplied by steam. More than half of the entire number of cotton factories are situated in Lancashire. The principal places in which the cotton manufacture is carried on are Manchester, Oldham, Bolton, Ashton, Preston, Blackburn, Bury, Middleton, Burnley, and Chorley, all in Lancashire,—Stockport, Hyde, and Duckenfield, in Cheshire,—and Glossop in Derbyshire.

The hosiery manufacture, in which cotton is chiefly used, and which employs about 50,000 persons, is principally carried on at Nottingham; the manufacture of woollen stockings at Leicester, and of silk at Derby. In the three counties of Nottingham, Leicester, and Derby, is also a considerable manufacture of cotton into lace and bobbin-net.

The West Riding of Yorkshire is the chief seat of the *woollen manufacture*, which, until the introduction and rapid extension of cotton during the latter half of the last century, was the staple manufacture of England. Leeds, Halifax, Bradford, and Huddersfield, all in the county of York, with Rochdale in Lancashire, are the towns in which it is most extensively carried on. At Norwich, on the east side of the island, is a considerable manufacture of crapes, and in the west of England broadcloths and kerseymeres are extensively manufactured in the counties of Gloucester and Wilts.

The making of *carpets* is most extensively pursued in the West Riding of York, at Kidderminster (in the county of Worcester), and at Axminster (in Devon). What are called Brussels carpets are chiefly made at Kidderminster, and the so-called Kidderminster carpets are mostly the produce of Yorkshire or of Scotland.

The manufacture of flannel and various woollen goods is largely carried on in Wales, chiefly in the county of Montgomery, and to a less extent in the counties of Glamorgan, Caermarthen, Denbigh, and Merioneth. The towns of Welshpool (in Montgomeryshire), and Wrexham (in Denbighshire), are the chief seats of the flannel trade.

In 1841, the total number of persons in England and Wales employed in the wool and worsted manufacture exceeded 160,000.

The *silk manufacture* is carried on in the metropolis and in the counties of Cheshire and Lancashire; the district called Spitalfields, in the east of London, and the town of Macclesfield, in Cheshire, are its principal seats. The silks of England, however, do not equal those of France in point of taste and elegance of design. The silk manufacture employed, in 1841, about 78,000 people.

The *linen manufacture* is small in extent, and the town of Barnsley, in the West Riding of Yorkshire, is its principal seat. The number of persons employed in this branch of industry, in 1847, was a little short of 20,000.

Besides the above, a great variety of other branches of textile manufacture are pursued, including the working of hemp into sacking, cordage, canvass, &c., rope-making, straw-plaiting, basket-making, wire-working; the making of ribbons, fringes, trimmings, the printing of cottons, and numerous others.

The *iron and hardware manufacture* has its chief seats in the south part of Staffordshire and the adjacent portion of Warwick; in Shropshire, Derbyshire, and the West Riding of York; and in the county of Glamorgan, in Wales. The principal towns for the making of hardware goods are Birmingham, Dudley, Wolverhampton, Walsall, and Bilston; together with Sheffield, in Yorkshire, which is the chief seat of the cutlery trade. In Wales, Merthyr-Tydvil is the chief seat of this branch of industry.

The *leather manufacture* gives extensive employment, and occupies more than 176,000 boot and shoe-makers. The shoe trade has its chief seat in the counties of Northampton, Stafford, and the metropolis; that of gloves at Worcester; of saddlery in London and Staffordshire; and that of furs in London.

The making of *earthenware* is most extensively carried on in the north of Staffordshire, in a district which from this circumstance is called the Potteries. Porcelain is also made in Derbyshire, at Leeds, and at Worcester, which latter place is especially distinguished for the beauty of its china. *Glass* is made chiefly in the neighbourhood of Newcastle, in London, in Staffordshire, Lancashire, and also at Birmingham, Stourbridge, Bristol, and other places.

The making of *watches and clocks* employs nearly 12,000 persons; London is the principal seat of this branch of industry, which is also extensively pursued at Liverpool, Coventry, and other places.

The manufacture of *silver and plated goods* has its chief seats in London, Birmingham, and Sheffield. In the former place most silver plate is made, in the two latter most of the plated ware. Gold plate is likewise made in London.

The manufacture of *paper* is chiefly carried on in the counties adjacent to the metropolis, which is the great seat of the book trade. In connection

with the book trade is the employment of a large number of printers, bookbinders, book and print-sellers, type-founders, engravers, ink-makers, map-sellers, &c. &c.

The manufacture of *beer* and *spirits* is a very considerable branch of industry. The quantity of beer annually brewed is not less than 12,000,000 barrels, and the quantity of spirits made averages from 6,000,000 to 8,000,000 of gallons.

Ship-building employs nearly 16,000 work-people, and is most extensively pursued at London, Liverpool, Sunderland, Plymouth, and Portsmouth; to a less extent, at Chatham, Hull, Bristol, Whitby, Yarmouth, Newcastle, Whitehaven, and most other ports. Connected with this are numerous boat-builders, block and oar-makers, sail-makers, ship-caulkers, &c.

(51.) The counties in which the largest proportion of the inhabitants are engaged in the pursuit of trade and manufactures are Lancashire, the West Riding of Yorkshire, Cheshire, Warwickshire, Nottinghamshire, Middlesex, Leicestershire, Derbyshire, Staffordshire, and Worcestershire. These are essentially the manufacturing counties. Lancashire is identified with the cotton manufacture, the West Riding of Yorkshire with that of woollen goods, Staffordshire and the adjacent parts of Worcester and Warwick with the making of iron and hardware; and these three localities represent the great and prominent features in the manufacturing industry of our country.

(52.) *Commerce*.—The foreign commerce of Great Britain is more considerable than that of any other country, and extends to the most distant parts of the globe. It consists for the most part in the *import* of raw materials and tropical produce, and the *export* of manufactured goods,—our ships in many cases carrying back to distant countries in a manufactured state the fabrics originally brought from thence in the condition of native and unworked material. This is especially the case with the cotton trade, the material of which is wholly derived from abroad, and its consumption in a manufactured state largely dependent upon foreign markets. To a less extent, the woollen trade is of similar character, the greater part of the material being derived from abroad, though a considerable quantity is also drawn from the home supply.

Imports.—The largest article of import into Great Britain is raw *cotton*, chiefly derived from the United States, (which supply six-sevenths of the entire quantity,) the East Indies, Brazil, and Egypt. The total amount of cotton imported into the British Islands in the year 1848 was 6,362,090 cwt., or more than 700,000,000lbs.

Wool is imported from the British colonies in Australia, the Cape of Good Hope, and the East Indies, which together furnish about half the entire quantity, and the supply from which is yearly increasing. A considerable quantity is also derived from Germany. The annual import of wool exceeds 70,000,000lbs. Alpaca and lama wool are now imported

from South America, and their consumption is on the increase; as is also that of mohair, or goat's wool, from the countries of Western Asia.

Silk is imported, in a raw state, from India, Italy, China, and France, of which India supplies the largest proportion. The quantity annually imported varies from 4,000,000lbs to 6,000,000lbs. The import of manufactured silks, chiefly from France, is also very considerable.

Flax is imported from Russia and the other countries adjacent to the Baltic, but chiefly for the supply of the Scotch and Irish manufactures. Its consumption in England is inconsiderable. *Hemp* is largely imported from Russia, and some also from the East Indies.

Hides are imported from Russia, India, the Cape of Good Hope, and South America. Russia supplies the larger quantity of these, and also of *tallow*, which forms a very considerable article of import.

Of *timber*, the largest proportion (chiefly pine and fir) is derived from Canada and the other British provinces in North America, and also a considerable quantity from Prussia, Russia, and Sweden and Norway. Mahogany is chiefly brought from Honduras, and a variety of ornamental woods, including cedar, boxwood, rosewood, satinwood, &c., from the coasts of tropical Africa, the East Indies, and the countries on the eastern shores of the Mediterranean. Teak wood is imported from India and Western Africa, and is largely used for ship-building.

Of articles of food imported for home consumption, the most important are *tea*, (about 50,000,000lbs. annually,) derived almost wholly from China; *coffee*, (57,000,000lbs.,) principally from Ceylon, Central America, the West Indies, and Brazil; and *sugar* (more than 800,000,000lbs.) from the West Indies, Mauritius, Cuba, the East Indies, and Brazil, together with a considerable quantity of molasses or treacle.

Of *spirits and wines*, brandy (about 3,000,000 gallons) is imported almost wholly from France,—rum (nearly 7,000,000 gallons) chiefly from Jamaica and other ports of the West Indies;—and wine (nearly 8,000,000 gallons) principally from Spain and Portugal, and, to a much less extent, from Madeira, the Cape of Good Hope, Sicily, France, Germany, and the Canary Islands.

Of various kinds of *oils*, palm-oil is imported from Western Africa,—olive-oil from Italy, Spain, and Turkey,—rape-oil from Holland and Germany,—cocoa-nut oil from the East Indies,—cod-oil from Newfoundland,—spermaceti and various train-oils from the fisheries in the South Pacific Ocean, and the shores of Australia, Newfoundland, and Greenland. A considerable quantity of cod-oil is also obtained from Peterhead (on the coast of Aberdeenshire), and rape-oil is extensively made at Newcastle, South Shields, Liverpool, and other places on our own shores. The Northern whale-fishery is now less extensive than formerly: that in the Southern Seas is largely on the increase.

Corn and grain of various descriptions are now annually imported into the British Islands, chiefly for the consumption of Ireland. These consist of *wheat* (principally from Russia, Prussia, the United States, France, Egypt, Turkey, British North America, Denmark, and Germany),—*barley* and *oats* (from Denmark, Germany, and Holland),—*rye* (from Russia),—and a large quantity of *maize*, or Indian corn, principally from the United States, the Turkish provinces on the Danube, Austria, and Hungary. *Rice* is imported from the East and West Indies, and the United States; *sago*

from the East Indies;—*arrow-root* from the Bermudas, the East and West Indies, and South America.

Of an immense variety of other articles of import, some of the principal are cocoa (South America);—pepper, ginger, nutmegs, cinnamon, cloves, and other spices (from the East Indies and Ceylon);—dried fruits, including raisins (Spain, Turkey, and other Mediterranean countries), currants (from Greece and the Ionian Islands), and figs (from Turkey);—oranges (from the Azores, Spain, Portugal, and Malta);—nuts, almonds, &c. (from Spain and Portugal);—butter, eggs, and cheese (from Holland, France, and the Channel Islands, and the latter also from the United States);—salt beef and pork;—various medicinal herbs (from Turkey, China, South America, India, and the United States);—with pine-apples, yams, and other tropical fruits, from the West Indies.

Tobacco is largely imported (about 35,000,000 lbs. annually) chiefly from the United States; also from various parts of the East and West Indies.

To the above may be added various dyes and tanning stuffs, including shumac, valonia, indigo, cochineal, gum-arabic, shellac, madder, &c.:—pot and pearl ashes (from the United States and Canada);—barilla (from Spain and other Mediterranean countries);—sulphur (from Naples);—saltpetre (Peru, India, &c.);—together with many others of less importance. The substance called *guano* is largely imported as a manure, chiefly from the Chinchas Islands, on the coast of Peru, and some small islets off the western shores of South Africa.

Exports.—The principal articles of export from the British Islands, enumerated in the order of their importance, are manufactured cotton and woollen goods, cotton yarn, wrought iron and steel, hardware and cutlery, linen manufactures, copper and brass goods, coals, earthenware, manufactured silk, beer and ale, leather, glass, tin, salt, dried fish, soap and candles, machinery, stationery, books, &c. The total value of these averages annually about £50,000,000; of which cotton manufactures and cotton yarn amount to upwards of £20,000,000; woollen manufactures to about £6,000,000; linen manufactures to nearly £3,000,000; metals (chiefly iron and steel) to about £5,000,000; and hardwares and cutlery to upwards of £2,000,000. The linen, however, is chiefly the produce of Scotland and Ireland.

Of these articles, the largest quantities are exported to the United States; next in succession, to the East Indies, Germany, Prussia, Holland, the British colonies in North America, Brazil, Turkey, France, the West Indies, Russia, Australia, Italy, China, Spain and Portugal, Chile, Peru, and other South American States; and in a less degree to every country on the face of the globe.

The quantity of *shipping* by which so large a foreign trade is carried on is necessarily very considerable. In 1848, there were, belonging to the English, above 24,000 ships, making upwards of 3,254,000 tons, with 183,000 men. Nearly 800 of these are steam vessels, the use of which, both for the transit of merchandise and passengers, has very largely increased of late years. Steamers now navigate every part of the North Atlantic and Indian Oceans (including the Mediterranean and Red Seas), and arrangements are at present in progress for extending the advantages of this mode of communication to Australia, New Zealand, and the various countries which border on the Pacific.

Of the tonnage of ships, not English, engaged in the foreign trade of Britain, the largest quantity belongs to the United States, and next in order to France, Germany, Denmark, Prussia, Holland, Norway, Russia, Sweden, Belgium, and Italy.

The voyages made in the coasting trade between the various parts of the British Islands amount annually to upwards of 300,000 in number (above 25,000,000 tons), of which the coasting trade of England alone is about 16,900,000 tons.

The principal ports for the foreign trade are London, Liverpool, Hull, Stockton, and Southampton; for the Irish trade, Bristol and Liverpool; and for the coasting trade in general, Newcastle, Gloucester, Plymouth, Whitehaven, and Sunderland. Including the foreign, colonial, and coasting trade, more than 30,000 ships (above 5,000,000 tons) annually enter the port of London; and nearly 15,000 ships (2,800,000 tons) that of Liverpool. The foreign tonnage of Liverpool has, however, for several years past, exceeded that of London.

(53.) *Internal trade and means of communication.*—The vast internal traffic constantly carried on in every part of the British Islands (and especially in England) is facilitated by the numerous roads which, together with canals and railways, intersect the country in every direction. In England alone are above 2300 miles length of *canals*, and 1800 miles of river navigation, so that a most extensive system of water communication is formed between the different parts of this country. The first canal formed in England was completed in the year 1760. By means of these artificial channels, the opposite shores of the island are united, and the waters of all the principal rivers connected one with another. Thus the basin of the Humber is united to that of the Mersey by canals which in three different places cross the watershed of the Pennine Chain (the Leeds and Liverpool, the Rochdale, and the Huddersfield Canals), and also by the Grand Trunk Canal, which unite the waters of the Trent and the Mersey. From the last-mentioned canal, again, a similar line of communication extends through the middle of the country, past Birmingham, to the Thames, at London, and also, by the valley of the Cherwell, to the same river at Oxford. The Thames and Severn Canal connects the waters of those rivers, crossing the line of the Cotswold Hills; and the Kennet and Avon Canal unites the Kennet (a tributary of the Thames) with the Lower Avon, which flows into the Bristol Channel. Others, again, extend from the basin of the Thames to the rivers of the south coast. Although, since the introduction of railways, of less relative importance than formerly, the canal and river navigation is still largely used for the conveyance of heavy goods.

Railways.—The first railway constructed expressly with a view to passenger traffic, and worked by locomotive engines, was that between the towns of Liverpool and Manchester, (a distance of thirty-one miles,) opened in 1830. Within the twenty years since elapsed, this mode of communication has increased to an astonishing extent, and at the present time the total length of the railways open for traffic in England and Wales

is nearly 5000 miles, besides many lines in progress of construction. Altogether, England has a more extensive system of railway communication than any other European country, excepting Belgium.

Since the formation of railways, the internal traffic of the country has vastly increased, owing to the greatly increased rate of speed with which journeys are performed, and the superior economy of this mode of conveyance as compared with that of coach travelling. Places which were formerly distant a journey of two or three days and nights, can now be reached within a single period of daylight, and all the principal towns of England are brought within a journey of from four to six hours from the metropolis.

The recent introduction of the electric telegraph upon the principal lines of railway has already exerted a powerful and beneficial influence upon the commercial and social relations of the country. By its means, the prices of every market, the arrival of packets, and the signalling of ships, are now known immediately in all the great seats of trade; and information of the commission of crime is transmitted from town to town with unerring certainty and instantaneous rapidity.

(54.) *National divisions.*—The fifty-two counties into which England and Wales are divided have been already mentioned (Art. 13). Most of the counties are subdivided into *hundreds*, and these again into parishes. Yorkshire is divided into three ridings, the subdivisions of which are called *wapentakes*. Kent has an intermediate division into *lathes*, and Sussex into *rapes*, each of which are subdivided into hundreds. The counties of Northumberland, Cumberland, Westmoreland, Durham, and Lancashire, are divided into *wards*. In Lincolnshire, some of the divisions are called *wapentakes*, and others hundreds. The entire number of parishes is 8511 in England, and 869 in Wales.

Another division of the country, of recent introduction, is that into poor-law unions, the names of which are generally derived from one of the principal market-towns within their circuit. For political purposes, also, all the larger English counties have been separated into two divisions, distinguished either as a northern and southern, or an eastern and western, division.

The *ecclesiastical* division of England and Wales is into two archiepiscopal provinces, (those of Canterbury and York,) which embrace twenty-six bishoprics, only six of which are within the province of York. Each bishopric is subdivided into deaneries, and each deanery into parishes, which latter is both an ecclesiastical and a civil division.

Besides the above, there are also local divisions in various parts of the country, the limits of which are dependent, for the most part, upon the natural features of the district. They form, indeed, in many cases, distinct geographical divisions, and indicate the seat of particular classes of the population, and peculiar industrial pursuits. Thus, the low district in the south-east part of Lincolnshire, adjacent to the shores of the Wash, is

called *Holland*, which country it resembles in physical conformation; and a tract in the north-west part of the same county is distinguished as the *Isle of Arholme*, a name the derivation of which implies its being a river-island, surrounded by the waters of the Trent, the ancient course of the Don, and the adjacent streams. The south-east part of Yorkshire forms the peninsula of *Holderness*, an extensive grazing district; the north part of Cambridgeshire constitutes the *Isle of Ely*, which has a jurisdiction separate from the rest of the county. Again, the north-western extremity of Derbyshire is distinguished as the *Peakland*, a hilly district,—part of the North Riding of Yorkshire is called *Cleveland*, and so on.

The English counties vary greatly in size. The largest, Yorkshire, has an area of 5283 square miles,—the next in size, Lincoln, 2611,—the third, Devon, 2585,—and Norfolk, the fourth in order of magnitude, 2024 square miles. Rutlandshire, the smallest county, is only 149, and Middlesex 282, square miles.

The largest of the Welsh counties is Caermarthen, 974 square miles, and the smallest, Flintshire, 144 square miles.

(55.) *Towns and important places.*—England contains a greater number of large towns than any other country in the world. London, the metropolis of the empire, has at present a population of two millions and a quarter. Liverpool and Manchester have each nearly 300,000, Birmingham and Leeds nearly 200,000, inhabitants. Bristol and Sheffield have each a population exceeding 100,000: Newcastle, Sunderland, Hull, Preston, Bolton, Oldham, Nottingham, Leicester, Norwich, Portsmouth, Plymouth, and Bath, between 50,000 and 100,000. A great number of other places have from 20,000 to 50,000 inhabitants.

All the places above mentioned are situated within the manufacturing districts. In the strictly agricultural counties the towns are generally small, the number of inhabitants varying from 2000 to 8000 or 10,000.

In the following Tables, the counties are recapitulated, in the order of their respective situation, with the names of the principal towns in each. The figures attached to the towns express the population, according to the census of 1841.* The name of the county-town is distinguished by italics.

* Round numbers are used,—in the case of the larger towns all figures which express less than thousands, and in the smaller all expressing less than hundreds, being disregarded. In stating the populations of the towns as a whole, portions are, in a few cases, added, which do not belong to the counties under which they are enumerated. Thus, Gateshead, a suburb of Newcastle, is situated in the county of Durham, as portions of London are situated in the counties of Surrey, Kent, and Essex, though the larger within the limits of Middlesex.

ENGLAND.

SIX NORTHERN COUNTIES, of which Northumberland, Durham, Lancashire, and the West Riding of Yorkshire, are manufacturing, trading, and mining counties. Cumberland, Westmoreland, and the East and North Ridings of Yorkshire, are chiefly agricultural. In Cumberland, however, some manufactures (principally cotton) are carried on at Carlisle, and mining at Whitehaven and elsewhere. The northern portion of Lancashire, called Furness, is a detached district, belonging to the group of the Cumbrian Mountains. •

Counties.	Towns.
Northumberland .	Newcastle (with Gateshead), 90,000—North Shields and Tyne-mouth, 27,000—Berwick-upon-Tweed, 13,700—Morpeth, 7000—Alnwick, 5000.
Durham	Sunderland (with Wearmouth), 53,000—Durham, 14,000—Darlington, 11,000—Stockton, 9800—Hartlepool, 5300—South Shields.
Cumberland . . .	Carlisle, 23,000—Whitehaven, 15,000—Workington, 6000—Penrith, 6000—Cockermouth, 4900—Maryport, 5300—Keswick, 2400.
Westmoreland . .	Kendal, 10,000—Appleby, 1400.
Yorkshire:	
West Riding . .	Leeds, 162,000—Sheffield, 111,000—Bradford, 34,000—York, 30,000—Huddersfield, 25,000—Halifax, 20,000—Saddleworth, 16,800—Wakefield, 15,000—Barnsley, 12,300—Dewsbury, 10,600—Doncaster, 10,500—Rotherham, 5500—Ripon, 5500—Pontefract, 9800—Harrowgate, 3300—Goole, 2800.
North Riding .	Scarborough, 10,000—Whitby, 9800—Malton, 6600—Richmond, 4000—North Allerton, 3000.
East Riding . .	Hull, 68,000—Beverley, 8600—Bridlington, 3300.
Lancashire . . .	Manchester (with Salford) 296,000—Liverpool, 286,000—Preston, 50,000—Bolton, 49,700—Oldham, 42,500—Blackburn, 36,600—Wigan, 25,000—Rochdale, 24,000—Ashton-under-Lyne, 23,000—Bury, 21,000—Warrington, 19,000—Colne, 15,000—Lancaster, 14,400—Chorley, 13,000—Burnley, 10,700—Middleton, 7700—Ulverston, 5400—Fleetwood, 2800.

(56.) The northern counties contain a greater number of large towns in close proximity than any other portion of England; many of these have been already mentioned (Arts. 50, 52). A brief account of the principal of them is here subjoined, with a notice of such other localities as are more particularly deserving of remark.

The town of *Berwick-upon-Tweed*, on the most northern part of the English frontier, was formerly more important than at present, and was the seat of many conflicts celebrated in the history of border warfare. Though now included within Northumberland, it has the privileges of a county of itself. The mouth of the Tweed forms an indifferent harbour, and the trade is chiefly confined to the export of salmon, corn, and coals to London and other places. The principal manufactures are those connected with shipping, besides which are some iron-works. Berwick is still surrounded by walls, built in the time of Elizabeth, but these do not include so much space as the more ancient fortifications. Immediately to the north-west of the town is Halidon Hill, the site of a victory gained by Edward III. over the Scots in 1333: thirteen miles to the south-west is

Flodden Field, the scene of a still more important battle, in which King James IV. of Scotland was defeated by the English forces (A. D. 1513).

Newcastle, on the north bank of the river Tyne, 12 miles above its mouth, has a very extensive trade, chiefly in the shipment of coals to London and other markets, besides considerable foreign commerce. Several important manufactures are carried on, the principal of which are glass and iron, with copperas, vitriol, white-lead, and various chemical works. Ship-building is also pursued to a great extent, both here and at various ports on the adjacent coast. At the mouth of the Tyne are the adjoining towns of *North Shields* and *Tynemouth*, both on the north bank of the river, and *South Shields*, on the south bank, all busy seats of trade and industry. At the mouth of the Wear, a few miles to the southward, are the adjoining towns of *Sunderland* and *Bishop Wearmouth*, on the south side of the river, and *Monk Wearmouth* on the north bank, the three together forming one great town, connected by a stupendous iron bridge, of a single arch, and of sufficient height to allow vessels of 400 tons burden to pass beneath.

Durham, situated on a rocky eminence almost surrounded by the river Wear, is chiefly interesting from its venerable cathedral and its university. —*Darlington* has considerable manufactures of woollen, cotton, and linen goods, with iron-founderies and glass works. —*Stockton*, on the north bank of the Tees, carries on great trade with Holland, Hamburg, and the countries lying round the Baltic, and has manufactories of sail-cloth and other articles. —*Hartlepool*, on the east coast of the county, is chiefly important for its fishery, and is resorted to as a provincial watering-place.

Carlisle, an ancient cathedral city, situated on the south bank of the river Eden, is a place of considerable manufacturing importance. From its situation on one of the great lines of communication between England and Scotland, it commands an extensive traffic. It contains an ancient castle, part of which is now in ruins; and portions of the ancient walls of the city are still standing. Carlisle is near the western termination of the old Roman Wall, which extended across the island between the mouth of the Tyne and the Solway Firth, a distance of 68 miles, and portions of which are still in existence. This wall, along the site of which a rampart of earth was originally formed by the Roman general Agricola, and strengthened by the Emperor Hadrian, was completed by the Emperor Severus; it consisted of stone, several feet in height and thickness, and was fortified by a ditch, and by stations or towers at frequent intervals. —*Whitehaven*, a few miles to the north of St. Bees Head, is a considerable sea-port, almost wholly dependent upon its valuable coal-mines, the produce of which is extensively exported, chiefly to Ireland: it has also some foreign trade, and valuable iron-works have recently been established in its vicinity. —*Workington*, *Maryport*, and several other places on the coast to the northward, are also extensively engaged in the coal-trade. —*Kewick*, in the centre of the lake-district, is a place of great resort to tourists, and is surrounded by the most varied and beautiful scenery in England.

Appleby, the county-town of Westmoreland, is an inconsiderable place. —*Kendal*, on the banks of the river Kent, has extensive trade, and manufactures of cotton and coarse woollen goods. Kendal is the most northern point to which the canal-navigation of England extends.

York, situated on the banks of the Ouse, in the midst of the beautiful plain distinguished by its name, is a very ancient city, the second in the kingdom in point of rank, though surpassed by many others in wealth and importance. It is chiefly distinguished for its magnificent minster or cathedral, one of the finest Gothic edifices in the world. It has also an ancient castle (now used as a prison), and the former walls and gates of the city are still standing. York forms a sort of metropolis of the northern counties, and is also a county of itself. A few miles to the west of the city is Marston Moor, the scene of one of the principal engagements between the armies of Charles I. and the Parliament (A. D. 1644); further to the south-west is the village of Towton, where a sanguinary battle was fought during the wars of the Roses (A. D. 1461).

Leeds, the principal seat of the woollen manufacture, is situated on the banks of the river Aire, on the north-eastern border of a great manufacturing and coal-mining district, and at a distance of 205 miles from London (by railway). The greater part of the town lies on the north side of the river. Leeds is irregularly built, and the streets in general narrow and crowded, but some of its public buildings are handsome, and many improvements have been made of late years in the general aspect of the town. Besides the production of woollen goods, Leeds has also many large establishments for flax-spinning, together with glass-houses, potteries, and factories for making steam-engines and other machinery.

The country to the east and north of Leeds is wholly agricultural, but to the west and south-west it is covered with populous towns and villages, which resound with the noise of the steam-engine, and bedim the air with huge clouds of smoke issuing from the chimneys of factories. Most of these are engaged in various branches of the woollen manufacture. (Art. 50.) Among the principal of them are *Bradford*, *Hali-fax*, *Dewsbury*, *Huddersfield*, and *Saddleworth*,—the last of which is a straggling though populous village, (or rather collection of villages) situated in a wild and mountainous country near the borders of Cheshire and Lancashire. The making of woollen cloths, kerseymeres, and shawls, with various worsted and stuff goods, forms the staple of industry in all the above-mentioned places.—*Wakefield*, on the river Calder, 9 miles to the south of Leeds, has great trade in corn and wool, and also considerable manufactures: a battle was fought near this town in 1461.—*Barnsley*, 7 miles further south, is the chief seat of the linen trade.—*Doncaster*, on the river Don (30 miles south of York), is celebrated for its extensive corn-market, and its annual races.

Sheffield (45 miles south-west of York, and 176 by railway from London) is situated at the confluence of the little river Sheaf with the Don, and is a very ancient town. It has been celebrated from very early times for the manufacture of cutlery, and every branch of industry connected with this trade is largely carried on (Art. 50). There are also extensive manufactories of carpets and horse-hair cloth.

Hull (properly *Kingston-upon-Hull*), 34 miles south-east of York, stands on the north side of the estuary of the Humber, at the mouth of the small river Hull. It is one of the principal sea-ports in the kingdom, and possesses a range of extensive docks and warehouses, with ship-building yards and every facility for extensive commercial undertakings. Hull is the principal seat of the Baltic trade, and has also commercial rel-

other parts of Europe, as well as with the West Indies and the countries of South America.

Bridlington, *Scarborough*, *Whitby*, and *Middlesborough*, are sea-port towns situated on the east coast of Yorkshire: Scarborough is chiefly resorted to for its medicinal springs, and as a summer bathing-place; *Whitby* (a town of very ancient origin) has extensive alum-works in its vicinity, the produce of which is largely exported. Among the many changes which, owing to natural causes, have occurred in the low coasts near the mouth of the Humber, the village of *Ravenpur* (or Ravensburgh), which was the landing-place of Henry of Bolingbroke upon the expedition which resulted in the dethronement of Richard II. (A. D. 1399), and of Edward IV. on his successful return from the continent (A. D. 1471), has entirely disappeared, having been swept away by the sea.

Manchester, the second city in the British Islands in population, is situated principally on the east bank of the river Irwell, a tributary of the Mersey, at a direct distance of 158 miles to the north-west of London, or 188 by railway. It contains many interesting public buildings, among the chief of which is the cathedral church of St. Mary, an ancient Gothic structure; but the numerous cotton-mills impart the distinguishing feature to the town. Every branch of the cotton manufacture is here carried on to an enormous extent; iron and brass foundries are also numerous, as well as chemical works, and numberless others required for the supply of the wants of a large population. Manchester has increased vastly in extent of late years, and is still rapidly extending in size. *Salford*, on the west side of the Irwell, is properly a distinct town, and has the privileges of a separate borough, but it is connected with Manchester by five bridges, and the two form together one immense and continuous city. Manchester is the centre of an extensive system of canals and railways, and within a short distance are many large and populous manufacturing towns, nearly all devoted to the cotton trade (Art. 50).

Liverpool, 31 miles west by south of Manchester, and 201 by railway from London, is the great port of the cotton manufacturing district, and the emporium of an immense trade carried on with every part of the globe. It lies on the north-east side of the Mersey, near the mouth of the river, and extends more than 3 miles in length along its banks,—throughout the whole of which space are magnificent docks for the accommodation of shipping. The streets are spacious, and the public buildings (among which the most conspicuous are the Town Hall, the Exchange, the Custom House, and St. George's Hall—the intended seat of the Assize Courts) are numerous and splendid. The Collegiate Institution of Liverpool, and also the Mechanics' Institution, are both highly important educational establishments, and there are several other institutions for the encouragement of art and science. On the opposite side of the Mersey is *Birkenhead*, a town of recent origin, at which extensive docks have been constructed, and which promises to become an important seat of trade.

Warrington (about midway between Liverpool and Manchester), on the north bank of the Mersey, is a considerable manufacturing town: the making of sail-cloth, coarse linen and cotton goods, with iron-founding and glass-works, are extensively carried on.—*Lancaster*, on the south bank of the river Lune, near its mouth, though the county-town of Lancashire, is a place of inconsiderable importance, and has little trade, the

navigation of the river being interrupted by shoals which prevent any but small vessels from reaching the town: it possesses a fine ancient castle, now used as a gaol.—*Fleetwood*, on the south side of Morecambe Bay, at the mouth of the river Wyre, is a place of recent origin, and already possesses some coasting and channel trade.—*Ulverston*, near the north side of the bay, in the district of Furness, has great trade in the export of iron ore, limestone, and slates, all of which are extensively worked in the district: at *Hawkshead*, further to the north (about a mile distant from the west side of Lake Windermere), are some of the most considerable slate-quarries in the kingdom.

FOURTEEN MIDLAND COUNTIES, of which the first five (Stafford, Derby, Nottingham, Leicester, and Warwick) are principally manufacturing counties:—Oxford, Buckingham, Hertford, Bedford, Huntingdon, Northampton, and Rutland, agricultural. Worcestershire is partly manufacturing and partly agricultural—chiefly the latter; and Middlesex, which contains the metropolis, is the great seat of trade.

Counties.	Towns.
Staffordshire . . .	Wolverhampton, 36,000—West Bromwich, 26,000—Bilston, 20,000—Wednesbury, 11,600— <i>Stafford</i> , 10,700—Newcastle-under-Lyne, 10,000—Walsall, 7400—Leek, 7200—Lichfield, 6900—Burton-on-Trent, 6000—Tamworth, 4000—Stoke-upon-Trent.
Derbyshire . . .	<i>Derby</i> , 36,400—Chesterfield, 11,000—Belper, 9400—Wirksworth, 4000—Matlock, 4800.
Nottinghamshire .	<i>Nottingham</i> , 75,000—Newark, 10,000— <i>Manafield</i> , 9400—Worksop, 6000—East Retford, 5200.
Leicestershire . .	<i>Leicester</i> , 50,000—Loughborough, 10,000—Hinckley, 6300—Ashby-de-la-Zouch, 5200—Melton Mowbray, 3700—Bosworth.
Warwickshire . . .	Birmingham, 183,000—Coventry, 31,000—Leamington, 12,800— <i>Warwick</i> , 9700—Nuneaton, 4600—Rugby, 4000—Stratford-on-Avon, 3300.
Worcestershire . .	Dudley, 31,000— <i>Worcester</i> , 26,300—Kidderminster, 14,400—Bromsgrove, 9600—Stourbridge, 7400—Evesham, 4200—Stourport, 3000—Droitwich, 2800.
Oxfordshire . . .	<i>Oxford</i> , 24,000—Banbury, 7000—Witney, 3400—Henley-on-Thames, 3600—Woodstock, 1400.
Buckinghamshire .	Aylesbury, 5400—Great Marlow, 4480— <i>Buckingham</i> , 4000—Newport Pagnell, 3500—Eton.
Middlesex . . .	<i>London</i> (including Westminster and Southwark), 2,000,000—Brentford, 8000—Uxbridge, 3200—Staines, 2500—Harrow, 1300.
Hertfordshire . . .	<i>Hertford</i> , 6600—St. Alban's, 6500—Ware, 5900—Watford, 6300—Hitchin, 5600—Barnet, 3400.
Bedfordshire . . .	<i>Bedford</i> , 9000—Luton, 5800—Leighton Buzzard, 3900—Biggleswade, 3600—Dunstable, 2600—Amphill, 2000—Woburn, 1900.
Huntingdonshire .	<i>Huntingdon</i> , 3500—Ramsay, 3600—St. Ives, 3500—St. Neots, 3100.
Northamptonshire .	<i>Northampton</i> , 21,000—Peterborough, 6000—Wellingborough, 5000—Daventry, 4000.
Rutlandshire . . .	<i>Oakham</i> , 2700—Uppingham, 2000.

(57.) *Birmingham*, the great seat of the hardware manufacture, lies nearly in the centre of England, and about midway between Liverpool and London, being 97 miles from the former town, and 112 from the met

polis, by railway. It is watered by the small river Tame, and its branch, the Rea, (tributaries of the Trent,) but these are insignificant streams. It is, however, the centre of an extensive canal and railway communication with all parts of the country. The general appearance of Birmingham is not prepossessing, and a very considerable portion of the town is entirely occupied by an artizan population; but the principal streets have been much improved of late years, and some of the suburbs possess an attractive aspect. Of public buildings, the most striking is the Town Hall, built in the form of a Roman temple, with Corinthian columns of grey Anglesey marble. Every description of steel and iron goods are extensively made, from the largest description of fire-arms to the smallest metallic articles required for use or ornament; as pins, steel pens, buttons, buckles, nails, screws, and an immense variety of others. Both plated and japanned wares are also manufactured to a great extent, and the quantity of silver consumed in the making of pencil-cases, watch-chains, thimbles, and similar articles, is very great. Glass-making is also extensively carried on.

Within a short distance to the north-west of Birmingham are the populous towns of *Dudley*, *Wolverhampton*, *Walsall*, *Bilston*, *Wednesbury*, *West Bromwich*, and many others, all of them the seats of various branches of the hardware trade, and situated in the midst of canals, coal-mines, and iron-works.

The town of *Stafford* (situated on the river Sow, an affluent of the Trent,) is chiefly distinguished for an extensive manufacture of boots and shoes; the making of cutlery and the tanning of leather are also carried on. In the north part of Staffordshire, adjacent to the town of Newcastle-under-Lyne (38 miles north by west of Birmingham), is the district called the *Potteries* (Art. 50), which occupies an extent of about 10 square miles. Within this space are several populous towns and villages, in which almost the sole employment is the manufacture of porcelain, earthenware, and other wares in which clay forms the principal material. The principal of these are Stoke-upon-Trent, Longton, Shelton, Burslem, Hanley, and Lane End, all of which, though formerly distinct places, are now so nearly united as to have almost the connected appearance of one large town: these form together the borough of *Stoke-upon-Trent*. The total population of the Potteries is 62,000.—*Blare Heath*, in the n. w. part of the county, near the borders of Shropshire, was the scene of one of the battles fought during the Wars of the Roses (A. D. 1459).

The towns of *Derby*, *Nottingham*, and *Leicester*, have been already mentioned as the chief seats of the homiery and lace manufactures (Art. 50). *Derby* is situated on the river Derwent, a few miles above its junction with the Trent; it has largely increased of late years, since its becoming the centre of an extensive railway system by which it is connected with all the central and northern parts of England.—*Chesterfield*, in the northern part of the county, situated on the west bank of the river Rother (an affluent of the Don), has some cotton and woollen manufactures, with iron-works and potteries.

The extreme north-western part of Derbyshire is a district called the *High Peak* (Art. 14); the middle portion of the county, a hilly but less elevated tract, is distinguished as the Low Peak; these tracts contain great mineral wealth, and exhibit much beautiful scenery.—*Wirksworth* (12 miles n. n. w. of Derby) is situated in the midst of lead-mines and

various manufactures;—*Cromford* (2 miles distant) has extensive cotton-works: in its neighbourhood is the village of *Matlock*, romantically situated on the banks of the Derwent, and resorted to for its mineral springs (Art. 44).

Nottingham is situated at a short distance from the north bank of the Trent; it possesses a fine castle, built on the site of a more ancient fortress which was the scene of many interesting events in early English history.—*Newark*, lower down the river, upon an island which it forms near the junction of the Devon, has great trade in corn, malt, flour, and other agricultural produce.

Leicester, an ancient Roman station, and the scene of many historical occurrences, stands upon the east side of the river Soar, one of the chief affluents of the Trent. Besides its manufactures, it possesses considerable inland trade, and has extensive communication both by canals and railways with other parts of the kingdom.—*Loughborough*, 10 miles n. by w. of Leicester, has hosiery and lace manufactures, and also considerable trade in coals, brought from the neighbouring coal-field of Ashby-de-la-Zouch.—About 10 miles to the west of Leicester is the village of *Market-Bosworth*, near which was fought (A. D. 1485) the battle which terminated the Wars of the Roses.

The town of *Warwick*, a place of great antiquity, stands on the western bank of the river Avon; it is chiefly noted for its fine ancient castle and the various historical associations with which it is connected. Nearly adjacent to the town on the eastward is *Leamington*, a place of great resort for its medicinal springs.—*Coventry* (9 miles to the north-eastward of Warwick, and 18 miles south-east of Birmingham) is a very ancient city; it is the principal seat of the ribbon manufacture, and watch-making is also extensively pursued. Midway between Warwick and Coventry is *Kenilworth*, famous for the ruins of its castle, an edifice formerly of great strength and magnificence.—The small town of *Stratford-upon-Avon*, 8 miles south-west of Warwick, is celebrated as the birth-place of Shakespeare. On the southern borders of the county, near the rising ground of the *Edge Hills* (Art. 22), was fought in 1642 the first battle between the armies of Charles I. and the Parliament.

Worcester, a cathedral city, and a place of great antiquity, is situated on the east side of the Severn, in the midst of a fertile valley (Art. 23). It has manufactures of porcelain and gloves, and a considerable market for agricultural produce, especially hops. This city was the scene of Cromwell's victory over Charles II., in 1651.—*Kidderminster*, 13 miles n. of Worcester, on the banks of the river Stour, is noted for its extensive manufacture of carpets (Art. 50).—*Stowbridge*, on the same river, further to the north-eastward, and on the borders of the South Staffordshire coal-field, has extensive manufactures of glass, iron, and bricks. Both this place and *Stowport*, at the junction of the river Stour with the Severn, have also considerable inland trade, promoted by the extensive canal and river navigation which they command.—*Droitwich*, 6 miles n.n.e. of Worcester (on the little river Salwarp, an affluent of the Severn), is noted for its brine-springs, from which salt is extensively prepared.—*Everham*, 14 miles south-east of Worcester, situated in the beautiful valley watered by the Avon, is noted for a battle fought in its vicinity, A. D. 1265, which Prince Edward defeated Simon Montfort, Earl of Leicester.

The city of *Oxford*, the seat of one of the principal English Universities, is seated at the confluence of the Cherwell with the Isis, or Thames. Oxford is a very ancient city: it has little trade or manufactures, and depends almost entirely on the University, which embraces 20 colleges and 5 halls; among its various other establishments for the service of literature, one of the principal is the Bodleian Library, one of the finest collections of books in Europe, and containing 220,000 volumes.—*Banbury* and *Henley*, in this county, both possess considerable trade in the transport of agricultural produce: *Witney* has some manufacture of blankets, and *Woodstock* of gloves. A battle was fought near Banbury in 1469, between the troops of Edward IV. (under the Earl of Pembroke) and a body of insurgent forces. *Chalgrove Field*, the scene of the skirmish in which the celebrated John Hampden lost his life, in 1643, is in the same county, at a distance of 10 miles south-east of Oxford.

Aylesbury, situated in the midst of a fine valley, watered by the river Thame, has considerable trade in the agricultural produce of the surrounding district; the making of straw-plait is also pursued to some extent. The making of thread-lace was formerly largely carried on here, as well as at Buckingham and other places in this and the adjacent counties, but since the extensive introduction of machinery, this has been almost entirely transferred to the strictly manufacturing counties of the midland district (Art. 50).—*Eton*, on the north bank of the Thames, opposite Windsor, and also *Harrow* (Middlesex), 9 miles north-west of London, each possess a public school of much celebrity.

Hertford and *Ware*, both situated on the banks of the river Lea, have great trade in mealing and malting, and in agricultural produce in general, and the latter is one of the most considerable corn-markets in England.—*St. Alban's*, 12 miles south-west of Hertford (on the little river Ver, a tributary of the Colne), is a very ancient town, the site originally of a British, and afterwards of a Roman, settlement. It was also the scene of two battles between the rival houses of York and Lancaster,—the first in 1455, the second in 1461.—Near *Barnet*, on the borders of Hertfordshire and Middlesex, was fought the decisive battle between the same factions in 1471, in which the celebrated Earl of Warwick was defeated and slain.

In Bedfordshire, straw-plaiting and the making of straw hats are pursued to some extent at *Dunstable*, *Luton*, and other towns.—*Huntingdon*, on the river Ouse, is distinguished as the birth-place of Oliver Cromwell.—*St. Ives*, in the same county, has considerable cattle-markets and fairs. The village of *Stilton*, in the northern part of the county, gives its name to a kind of cheese, made almost entirely in Leicestershire.—*Northampton*, a considerable town on the banks of the river Nen, has an extensive manufacture of boots and shoes; stockings and lace are also made, and there is great trade in the produce of the surrounding district. A battle was fought near Northampton during the Wars of the Roses (A. D. 1460), in which the Lancastrians were defeated by the Earl of Warwick. The village of *Naseby*, 12 miles to the north-west, was the scene of the defeat of King Charles I. by the Parliamentary forces, in 1645.—*Daventry*, 11 miles west of Northampton, has some manufacture of shoes, and also of silk stockings and whips.—*Peterborough*, in the north-eastern extremity of the county, on the borders of the fen country, stands on the north bank of the Nen. It contains a fine cathedral, of great antiquity, and has con-

siderable trade in agricultural produce. Nine miles to the south-west of Peterborough is *Fotheringay*, where formerly stood the castle which was the scene of the confinement and execution of Mary Queen of Scots.

(58.) London, the metropolis of the British empire, is the most important commercial city in the world, and probably exceeds any other city, either in ancient or modern times, in its extent and the number of its inhabitants. Its entire length from east to west is nearly 10 miles, and its breadth from north to south exceeds 7 miles. The total area which it occupies is above 60 square miles.

The larger portion of London is situated on the north side of the Thames, in the county of Middlesex; the eastern suburbs of this part stretch into the county of Essex. In like manner, the portion on the south of the Thames, in the county of Surrey, extends eastward into Kent and unites itself to the towns of Deptford and Greenwich. The city of London, however, properly so called, is confined to a small portion of the metropolis, situated entirely on the north side of the river. That portion of the Thames which lies below London Bridge forms the harbour and port of London, belonging to which are extensive docks for the reception of shipping, principally situated on the north side of the river.

London is distinguished, on the whole, rather by works of utility than of ornament. Of its public buildings, two of the most striking and important are the cathedral church of St. Paul, and the collegiate church of St. Peter—generally known as Westminster Abbey. Perhaps the next in interest and importance to these are the Houses of Parliament, at present in progress of completion, and the British Museum: besides which are a great number of others, as the Bank, the General Post Office, Royal Exchange, &c., too numerous to be mentioned here. The Library of the British Museum, which contains upwards of 435,000 volumes, is one of the most valuable in the world, and ranks fourth in order of magnitude among the great libraries of Europe. London is the seat of an University, which consists at present of two colleges,—King's College, and University College. It possesses also numerous institutions for the cultivation of every branch of science and literature.

The Thames at London is crossed by seven bridges, one of which (the Hungerford Suspension Bridge) is for the use of foot passengers only. Two (Southwark and Vauxhall Bridges) are of cast iron,—the Hungerford Bridge consists of a platform suspended from iron chains,—and the remainder are of stone. The longest is Waterloo Bridge, which measures 1326 feet, and forms a perfectly level roadway, constructed upon nine elliptical arches of equal dimensions.

Greenwich, which adjoins the metropolis on its eastern side, contains the National Observatory, from the meridian of which English geographers (and also those of many foreign nations) estimate the degrees of longitude. Greenwich likewise possesses a magnificent hospital, used as an asylum for decayed seamen, more than 2700 of whom are resident within its walls, besides a large number of out-pensioners attached to the establishment. A similar institution for the reception of decayed members of th-

army exists at *Chelsea*, on the north side of the *Thames*, towards the western extremity of the metropolis.

SIX WESTERN COUNTIES, of which *Cheshire*, *Shropshire*, *Monmouthshire*, and *Gloucestershire*, are of mixed character—in part manufacturing and mining, and in part agricultural counties. The remaining two, *Hereford* and *Somerset*, are entirely agricultural.

Counties.	Towns.
<i>Cheshire</i>	<i>Stockport</i> , 28,000— <i>Macclesfield</i> , 24,000— <i>Chester</i> , 22,000— <i>Birkenhead</i> , 10,000— <i>Congleton</i> , 9000— <i>Nantwich</i> , 5500— <i>Middlewich</i> , 4700— <i>Northwich</i> , 1300.
<i>Shropshire</i>	<i>Shrewsbury</i> , 18,000— <i>Madeley</i> , 7400— <i>Bridgenorth</i> , 6200— <i>Wellington</i> , 6000— <i>Ludlow</i> , 5000— <i>Oswestry</i> , 4500— <i>Shifnal</i> , 1900.
<i>Herefordshire</i> . .	<i>Hereford</i> , 10,000— <i>Ledbury</i> , 4500— <i>Leominster</i> , 3900— <i>Ross</i> , 2500.
<i>Monmouthshire</i> . .	<i>Newport</i> , 10,800— <i>Monmouth</i> , 5400— <i>Chepstow</i> , 3305.
<i>Gloucestershire</i> . .	<i>Bristol</i> , 140,000— <i>Cheltenham</i> , 31,000— <i>Gloucester</i> , 18,500— <i>Stroud</i> , 8700— <i>Cirencester</i> , 6000— <i>Tewkesbury</i> , 5800.
<i>Somersetshire</i> . .	<i>Bath</i> , 52,000— <i>Taunton</i> , 12,000— <i>Frome</i> , 11,800— <i>Bridgewater</i> , 10,500— <i>Wells</i> , 7000— <i>Yeovil</i> , 7000— <i>Wellington</i> , 5000— <i>Shepton Mallet</i> , 4900— <i>Glastonbury</i> , 3300.

(59.) *Chester*, an ancient cathedral city, situated on the river *Dee*, was an important Roman station, and contains numerous interesting evidences of its early origin: the ancient walls of the city are still standing. *Chester* has considerable trade with the adjacent districts of North Wales, and by means of canals carries on an extensive commercial intercourse with the neighbouring northern and midland counties.—*Stockport*, in the north-eastern part of the county, at the junction of the *Tame* and the *Mersey*, is almost wholly devoted to the various branches of the cotton manufacture.—*Macclesfield*, in the east part of *Cheshire* (on the river *Bollin*, an affluent of the *Weaver*), is a considerable manufacturing town and the centre of a populous district. Both silk and cotton works are carried on to a large extent, and the making of silk-handkerchiefs is an important branch of industry: there are also copper and brass works.—*Nantwich*, *Northwich*, and *Middlewich*, all situated within the basin of the *Weaver*, are noted for their salt-works (Art. 16); at *Nantwich*, however, these are now less important than formerly, but the town has some manufacture of shoes, gloves, and cotton goods.

Shrewsbury, on the river *Severn*, which nearly surrounds the town, is a place of great inland trade, and a mart for the produce of *Shropshire* and the adjoining counties of North Wales. The battle between the troops of *Henry IV.* and *Hotspur*, A. D. 1403, was fought in its neighbourhood.—*Wellington*, $9\frac{1}{2}$ miles east of *Shrewsbury*, within the limits of the *Shropshire* coal-field, has extensive coal and metal works. Further to the south, and adjacent to the east bank of the *Severn*, is the populous district of *Coalbrook Dale*, which is the seat of extensive iron-works, and presents a busy scene of manufacturing industry. *Coalbrook Dale* is properly the name of a deep ravine, lying between two large and well-wooded hills: in its neighbourhood are several considerable towns and villages; among these are *Madeley* and *Broseley*, the latter on the w. bank of the *Severn*.

Hereford, an ancient cathedral city, and a place of importance in Saxon times, is situated on the north bank of the river Wye. It is a centre of traffic for the agricultural produce of the county.—*Monmouth*, at the junction of the Mannow with the Wye, has some iron and tin works.—*Chepstow*, at the mouth of the Wye, has considerable trade, exporting timber, coals, iron, cider, and other produce of the adjacent counties.—*Newport*, a short distance above the mouth of the Usk, is also a place of some trade, serving as an outlet for part of the produce of the adjacent coal-basin of South Wales. At *Pontypool*, 7 miles to the north-westward, the art of japanning was first practised in England, and there are extensive iron-works in its neighbourhood.

Bristol, next in importance to London and Liverpool in the list of the English sea-ports, lies chiefly on the north bank of the Lower Avon, about 8 miles above the mouth of the river, and at the place where it is joined by the little stream of the Frome. A small part of the town is on the south of the river, within the limits of Somersetshire, but Bristol forms a county of itself. The public works connected with the port of Bristol are very extensive, and embrace spacious quays, with magnificent docks for the accommodation of the largest-sized vessels. The foreign trade of Bristol has, however, been on the decline for many years past, and is greatly inferior to that of Liverpool; but it has recently experienced some revival. Its coasting and Irish trade is very considerable. Bristol has also considerable manufactures of glass; sugar-refineries; iron, brass, and other metal works; floor-cloth, earthenware, and a variety of other articles. The whole circuit of the city is nearly 10 miles, and for a further distance of 6 miles round is a busy manufacturing population, connected in various ways with the extensive trade of this port.

Gloucester, an ancient cathedral city, of Roman origin, is situated on the east bank of the Severn,—here divided into two channels, the tract enclosed between which is called Alney Island. Gloucester commands considerable inland trade, by means of the river and the canals with which it is connected, and has also some foreign commerce. The manufacture of pins, once largely carried on here, has been chiefly transferred to Birmingham.—*Cheltenham*, 9 miles to the north-eastward of Gloucester, is beautifully situated at the western foot of the Cotswold Hills, upon the banks of the little river Chelt, which flows into the Severn; it is a place of great resort for its mineral waters (Art. 44).—Near *Tewkesbury*, at the confluence of the Avon and the Severn, was fought one of the sanguinary engagements during the Wars of the Roses (A. D. 1471).—*Stroud*, 9 miles to the southward of Gloucester, situated amongst the declivities of the Cotswold Hills (upon the banks of the little river Stroud, which flows into the Severn), is the centre of an extensive clothing district. The numerous streams which water this tract, and which flow in general through deep ravines, set in motion a great number of mills, and the surrounding valleys present accordingly a scene of busy industry. Among the other places within this district engaged in the cloth manufacture are *Painswick*, *Bisley*, *Minchin Hampton*, and *Dursley*.—*Cirencester*, in the eastern part of the county, is a town of very ancient origin, and was an important Roman station.

Bath, situated on the north side of the Avon, 11 miles above R-

was an ancient British town, and afterwards a Roman station. It has, from the earliest times, attracted attention by its medicinal springs (Art. 44), and, like Cheltenham, is greatly resorted to by visitors in search of health or pleasure. Bath is one of the handsomest cities in the kingdom.—*Wells*, an ancient city lying at the southern base of the Mendip Hills, contains a fine cathedral, and together with Bath forms a bishop's see. Wells has a very extensive cheese-market; the village of *Cheddar*, in the neighbouring district, gives its name to the kind of cheese so called.—*Taunton*, on the river Tone, in the midst of the beautiful valley called by its name (Art. 26), has considerable local traffic; and *Bridgewater*, 6 miles above the mouth of the Parret, has some foreign as well as coasting trade. In the neighbourhood of these towns, near the junction of the Tone with the Parret, is a tract of rising ground, formerly surrounded by morasses and known as the *Ile of Athelney*, which served as a temporary place of refuge to Alfred the Great.—*Frome*, in the eastern part of Somerset (on a river of the same name which joins the Avon above Bath), has considerable woollen manufactures; *Yeovil*, in the southern part of the county, is distinguished for the making of gloves.

FIVE EASTERN COUNTIES, all wholly agricultural, excepting Norfolk, in which some manufacture of woollen goods is pursued in and around Norwich.

Counties.	Towns.
Lincolnshire . . .	<i>Lincoln</i> , 16,200— <i>Boston</i> , 12,900— <i>Louth</i> , 8000— <i>Gainsborough</i> , 6900— <i>Grimsby</i> , 3700.
Cambridgeshire . .	<i>Cambridge</i> , 24,500— <i>Wisbeach</i> , 8500— <i>Ely</i> , 6800— <i>March</i> , 5700— <i>Newmarket</i> , 2900.
Norfolk	<i>Norwich</i> , 62,300— <i>Yarmouth</i> , 27,800— <i>King's Lynn</i> (or <i>Lynn Regis</i>), 17,600— <i>Wymondham</i> , 5000— <i>Thetford</i> , 3900— <i>East Dereham</i> , 3800— <i>Wells</i> , 3500— <i>Swaffham</i> , 3300— <i>Holt</i> , 1600.
Suffolk	<i>Ipswich</i> , 28,400— <i>Bury St. Edmund's</i> , 12,500— <i>Sudbury</i> , 5000— <i>Woodbridge</i> , 4900— <i>Bungay</i> , 4800— <i>Lowestoft</i> , 4600.
Essex	<i>Colchester</i> , 17,800— <i>Chelmsford</i> , 9000— <i>Braintree</i> , 7000— <i>Maldon</i> , 5000— <i>Harwich</i> , 3800.

(60.) *Lincoln*, an ancient cathedral city, formerly of more importance than at present, stands on the north bank of the river Witham; its trade is entirely local, and is limited to the agricultural produce of the county.—The port of *Grimsby*, at the south side of the entrance of the Humber, has risen in importance of late years as a place of trade, for which it possesses great advantages, both in the construction of a fine harbour and in an extensive railway communication with the principal manufacturing towns of the interior.—*Gainsborough*, on the east bank of the Trent, has considerable inland trade, by means of the river and canals.—*Boston*, a few miles above the mouth of the Witham, and near the shores of the Wash, carries on great trade with the Baltic countries, and exports large quantities of oats and other agricultural produce, chiefly to London:—it has also manufactures of sail-cloth and other articles connected with shipping.

Cambridge, an ancient town seated on the banks of the river Cam (an affluent of the great Ouse), is chiefly distinguished for its University,

which consists of seventeen colleges and four halls. The town possesses considerable local trade, and is a great market for corn and various provisions.—*Ely*, in the same county, is an ancient cathedral city, situated on the left bank of the Ouse.—*Wisbeach*, in the northern part of the county and on the present channel of the river Nen, lies in the heart of the fen district, a large portion of the agricultural produce of which it exports.—The port of *Lynn*, or *Lynn Regis* (Norfolk), at the mouth of the Ouse, has considerable trade in the import of wine, coals, timber, and flax, and the export of agricultural produce.

Norwich, one of the largest cities on the east side of the island and a sort of capital of the eastern counties, stands on both banks of the river Wensum, a short distance above its junction with the Yare. It has been noted for the manufacture of woollen goods ever since the time of Henry I., by whom a colony of Flemings were settled in the neighbourhood, and this branch of industry introduced. Shawls, crapes, and various fabrics of silk and woollen, are extensively made here, and the town is also the centre of a great agricultural traffic, having one of the most extensive corn-markets in England. The cathedral of Norwich is one of the finest in the kingdom. Norwich is a town of great antiquity, and the village of Caister, in its immediate neighbourhood, was the site of a Roman station.—*Yarmouth*, the port of Norwich and an important commercial town, is situated at the mouth of the river Yare. The herring-fishery is largely carried on from this town, which has also great trade with the northern countries of Europe.—*Lowestoft* (on the coast of Suffolk), 9 miles to the south of Yarmouth, is connected with the river Waveney, an affluent of the Yare, by the Lake of Lothing and an artificial cut, and has hence some share in the export trade of Norwich: it is also used as a port for landing cattle and dairy produce brought from Holland and other countries on the eastern side of the North Sea.

Ipswich, on the river Orwell, 10 miles above its mouth, has great trade in corn and coals, and the business of malting is carried on to a large extent.—*Bury St. Edmund's*, in the western part of Suffolk, was a place of great importance in the Saxon times, and possesses some remains of an ancient abbey; it has considerable corn and cattle markets.—*Colchester* (Essex), on the banks of the river Colne, a few miles above its mouth, had formerly extensive manufactures of baize and other woollen goods, but these have entirely ceased. It exports agricultural produce, and the oyster-fishery is largely carried on here and at other parts of the Essex coast, on all the rivers and estuaries along which oysters are bred in vast numbers.—*Harwich*, a sea-port at the mouth of the Stour, has some ship-building, and is a place of embarkation for Holland and the adjacent portion of the continent: it is also frequented as a bathing-place.—*Chelmsford*, on the river Chelmer, is only of local importance, as a market for agricultural produce.

NINE SOUTHERN COUNTIES, all agricultural, excepting Devonshire and Cornwall, which are mining counties, and Wiltshire, in a portion of which the woollen manufacture is carried on (Art. 50.)

Counties.	Towns.
Kent	Chatham (including Rochester, 11,700), 41,000—Woolwich, 25,900—Dover, 19,000—Maidstone, 18,000—Canterbury, 15,400—Gravesend, 15,000—Ramsgate, 15,500—Margate, 15,500—Deal, 8700—Sheerness, 8500—Tunbridge Wells, 6300—Faversham, 6700—Dartford, 8500—Folkestone, 4100—Ashford, 3000—Sandwich, 2900—Whitstable, 2200—Hythe, 2200—New Romney, 955.
Sussex	Brighton, 30,000—Hastings, 14,900—Lewes, 9000—Chichester, 8500—Horsham, 5700—Worthing, 4700—Bex, 4000—Bognor, 3000—Eastbourne, 3000—Winchelsea, 700.
Surrey	Southwark (included in London)—Croydon, 15,600—Kingston, 8900—Richmond, 7700—Guildford, 6100—Epsom, 3500.
Berkshire	Reading, 20,000—Windsor (including Eton), 15,500—Newbury, 6400—Abingdon, 5600—Maidenhead, 3300—Wantage, 2800.
Wiltshire	Trowbridge, 11,000—Salisbury, 10,000—Devizes, 8000—Warminster, 6300—Bradford, 3000—Westbury, 3000—Maidenborough, 3400—Melksham, 2100—Wilton, 1200.
Hampshire	Portsmouth (including Portsea and Gosport), 66,500—Southampton, 27,700—Winchester, 19,700—Andover, 4900—Basingstoke, 4000—Lyndhurst, 3000.
Isle of Wight	Newport, 9000—Lyde, 5000—Cowes, 4100.
Dorsetshire	Weymouth (with Melcombe Regis), 7700—Dorchester, 6200—Poole, 6000—Bridport, 4800—Blandford-Forum, 3300—Wareham, 2700—Lyme Regis, 2700.
Devonshire	Plymouth (with Devonport), 60,000—Exeter, 41,000—Barnstaple, 10,000—Tiverton, 7700—Tavistock, 6300—Brixham, 5000—Bideford, 5200—Dartmouth, 4400—Exmouth, 4300—Teignmouth, 4400—Totnes, 4200—South Molton, 4300—Torquay, 4000—Honiton, 2900—Axminster, 2100.
Cornwall	Truro, 9900—Penzance, 11,000—St. Austell, 10,300—Camborne, 10,000—Redruth, 9800—Falmouth, 7300—St. Agnes, 7700—Lamerton, 6000—St. Ives, 5800—Bodmin, 4200.

(61.) *Canterbury*, situated on the banks of the Stour, in the eastern part of Kent, is an ancient ecclesiastical city, and the metropolitan see of England. It is a place of early British origin, and was important both in Roman and Saxon times. Canterbury contains a magnificent Gothic cathedral, and has many interesting remains of antiquity; its chief trade is in corn, hops, and wool, the produce of the surrounding district.—*Maidstone*, on the right bank of the Medway, lies in the midst of a fertile district, in which are extensive hop plantations and orchards; it possesses numerous paper-mills, and has considerable local trade.—*Tunbridge Wells* (16 miles s.w. of Maidstone, on the borders of Sussex), is resorted to for its mineral waters (Art. 44), and is noted for a peculiar manufacture of ornamental woods, known as Tunbridge ware.

Woolwich, upon the south bank of the Thames (5 miles to the eastward of London), is the great dépôt for artillery, and has a royal arsenal, which contains foundries and establishments for the making of cannon and every description of engineering and military stores.—*Gravesend*, 15 miles further to the eastward, is much resorted to by the people of the metropolis for purposes of pleasure, and during the summer the almost constant landing and embarkation of steam-boat passengers render it a busy scene.—*Chatham* and *Rochester* are adjacent towns, both situated on the east side of the Medway, at the commencement of the estuary by which it joins the

Thames. Chatham has a dock-yard, and extensive establishments for the preparation of naval stores. Rochester is a cathedral city, of very early origin, and possesses the ruins of an ancient castle.—At the mouth of the Medway, upon the island of Sheppey, is the port of *Sheerness*, which has an extensive dock-yard.—*Margate* and *Ramsgate* are both situated on the Isle of Thanet, at the N. E. extremity of the county; these towns, as well as Deal, Dover, Folkestone, Hastings, Brighton, Worthing, and many other places on the coasts of Kent and Sussex, are the resort of great numbers of the inhabitants of London during the summer, for the enjoyment of bathing and other sea-side recreations. Ramsgate possesses a good harbour, enclosed by two stone piers.

The towns of *Sandwich*, *Deal*, *Dover*, *Hythe*, and *New Romney* (all in Kent), with *Beve*, *Winchelsea*, and *Hastings* (in Sussex), are distinguished as cinque ports, and possess certain peculiar privileges, granted at a very early period, from the importance of their situation with respect to the opposite shores of the continent. They were originally five in number (whence the name), but three others were subsequently added. Dover, Deal, and Hastings are the only ones of any importance in the present day. Deal is situated on that part of the coast which faces the channel of the Downs, a great rendezvous for shipping.—*Dover*, at the point of the coast which lies nearest to the European mainland, has always been a great place of embarkation for continental countries; but it has of late been partially superseded in this respect by *Folkestone* (on the coast six miles to the westward), between which port and Boulogne (in France) there is now frequent and rapid communication by steam. Dover is celebrated for its ancient castle, an extensive pile of buildings situated on a height which overlooks the town; the greater part of these are now in ruins, and are of various ages,—some of Roman times. The total area which the walls of Dover Castle embrace is 35 acres. The direct distance between Dover and Calais is only 21 miles, and the white cliffs of the opposite coasts are distinctly visible from either side of the Channel.

Hastings is a fishing-town of some importance; seven miles to the north-west is the small town of *Battle*, with the ruins of an ancient abbey, said to occupy part of the ground on which the battle of Hastings was fought.—In *Pevensey Bay*, on the coast to the westward of Hastings, William the Conqueror first landed on his successful invasion of the island, A. D. 1066.

Lewes, an ancient town, is situated on the banks of the river Ouse; a battle was fought in its vicinity between the troops of Henry III. and those of the barons, under Simon Montfort, A. D. 1264.—*Newhaven*, at the mouth of the Ouse, is the port of Lewes, and has recently become a place of departure for steam-vessels to the opposite coast of France.—*Brighton*, on the coast, 46 miles nearly due south of London, has been rendered important by the constant resort of visitors from the metropolis during a period of more than half a century past, and is one of the most magnificently-built towns in the kingdom. Its intercourse with London has been greatly increased by the facilities afforded of late years by railway communication.—*Chichester*, in the western part of Sussex, about 5 miles distant from the coast, is a cathedral city, of Roman origin; it has a great market for agricultural produce.

The towns in Surrey (with the exception of that portion of the coun-

which forms part of the metropolis) are of small size, and only of local importance.—*Kingston*, on the south bank of the Thames, was a place of note in Saxon times, and the scene of the coronation of several of the Saxon monarchs.—In the north-western angle of Surrey, near the Thames, is the field of *Russumeade*, where the barons assembled in hostile array against King John (A. D. 1215), and on a small island in the adjacent river, *Magna Charta* was signed.

Reading, on the banks of the Kennet, near its junction with the Thames, has great trade in the agricultural produce of the surrounding country.—*Windsor*, in the eastern part of Berkshire, is distinguished for its fine castle, one of the principal residences of our gracious Sovereign; on the opposite bank of the Thames is Eton, already noticed (Art. 57).—*Newbury*, on the Kennet (15 miles w. by s. of Reading), has considerable trade in malting, and great inland traffic by the river and canals. This town was the scene of two engagements during the Civil War (A. D. 1643 and 1644), in the former of which Lord Falkland was killed.—*Wantage*, in the western part of the county, was the birthplace of Alfred the Great.

Devizes, in the centre of Wiltshire, on the high ground which divides the sources of the Salisbury and Bristol Avons, is of ancient origin; it has considerable woollen manufactures, and also an extensive corn-market.—*Trowbridge*, in the western part of the county (on a small affluent of the Bristol Avon), is the centre of an extensive manufacture of broadcloths and kerseymeres, which extends over a considerable tract of the adjacent country, embracing the towns of *Bradford* and *Melksham* (both situated on the Avon), and several others.—*Warminster* (8 miles to the south, seated on the river Wiley, an affluent of the Salisbury Avon,) has also some woollen manufacture and considerable trade in malting.

Salisbury, on the Avon (at the confluence of its tributaries, the Wiley and Bourn), is interesting from its fine 'ancient cathedral; 2 miles to the northward is Old Sarum, the site of an important town in Roman and Saxon times, and the original seat of the bishop's see. It is now only a ruin, with many interesting traces of antiquity. Five miles to the east of Salisbury are the ruins of Clarendon Castle, where the ecclesiastical statutes entitled the 'Constitutions of Clarendon' were drawn up in 1164. On Salisbury Plain, about 8 miles to the northward of the city, is *Stonehenge*, an ancient Druidical monument (Art. 25, note). At the village of *Avebury* (in the central part of the county, near the town of Marlborough,) are also the remains of a Druidical temple. Ancient barrows or tumuli, with many other monuments either of British or Roman times, are also numerous in many parts of the high downs of Wiltshire and the adjacent county of Berks.

Winchester (20 miles east of Salisbury), a cathedral city of very ancient origin, is situated on the bank of the river Itchin: it was the scene of the coronation of several of our early monarchs, and is associated with many historical occurrences.—*Southampton* (12 miles s. w. of Winchester and 80 miles distant from London by railway), situated at the head of the estuary called Southampton Water, has considerably increased in importance of late years: extensive docks have been constructed, and it is now the seat of a great foreign trade, especially that carried on with Spain, Portugal, and the other Mediterranean countries. It is also the chief station for the Mediterranean and the West India steam-packets.

Portsmouth, the great naval arsenal of England, and the principal seaport in the English Channel, is situated on the island of Portsea, which is divided from the mainland by a narrow creek. The arm of the sea which runs up to the westward of the town forms its harbour. The dockyard of Portsmouth is the largest in the kingdom, and contains extensive store-houses and workshops for the supply of every article required for the use of the navy. Opposite to Portsmouth, on the western side of the entrance to the harbour, is the town of *Gosport*, which also contains numerous works for the supply of the navy. Both Portsmouth and Gosport are strongly fortified, and constitute one of the chief defences of our country against foreign invasion.

The small towns of *Cowes* and *Ryde*, both on the north shore of the Isle of Wight, and also *Lymington*, on the south coast of Hampshire, are resorted to as summer watering-places. Near *Newport*, in the centre of the island, are the ruins of Carisbrook Castle, in which King Charles I. was imprisoned.

Poole, a seaport town situated on the north side of an extensive inlet of the coast, and *Wareham*, an ancient borough at the mouth of the river Frome, which flows into the upper part of Poole Harbour, both possess some coasting trade. The south-eastern corner of Dorsetshire (to the south of Poole Harbour) forms a peninsula called the Isle of Purbeck (Art. 25), in which several kinds of stone are quarried, and which also supplies large quantities of valuable potters' clay. Great part of the clay dug in the Isle of Purbeck is brought to Wareham, where it is placed in boats and carried to Poole, and thence shipped for the Staffordshire potteries.—*Dorchester*, an ancient town on the south bank of the Frome, has extensive remains both of British and Roman antiquity in its immediate neighbourhood.—To the northward of the Isle of Portland (at the mouth of the little river Wey, and upon its opposite banks,) are the towns of *Weymouth* and *Melcombe Regis*, which together form a pleasant watering-place.—*Bridport* (on the river Brit, about 2 miles above its mouth,) has considerable manufactures of cordage, twine, shoe-thread, and other hempen goods; it also carries on an extensive coasting and foreign trade, exporting its manufactures and the agricultural produce of the county, and importing coals, slates, wine, and Baltic produce.—*Lyme Regis*, a watering-place near the western extremity of Dorsetshire, has become interesting to geologists from the numerous fossil remains of extinct saurian reptiles found in the lias rocks in its neighbourhood.

Exeter, a city of early British origin, situated on the east bank of the river Exe, 7 miles above its mouth, possesses a magnificent cathedral: some woollen goods are woven in the neighbourhood, but the trade in these is less now than formerly. *Topsam*, 4 miles lower down the river, has some trade, and also ship-building.—*Ermouth*, at the entrance of the Exe into the Channel, and also *Sidmouth* (at the mouth of the little river Sid, further to the eastward), are resorted to as watering-places.—*Axminster* (on the east bank of the Axe) formerly had a considerable manufacture of carpets, but this is now given up.—*Honiton*, on the Otter, is celebrated for its fine lace.—*Tiverton* (on the Exe, 12 miles north of Exeter) has also considerable lace-manufacture, and extensive local trade.

Plsmouth (242 miles distant from London by railway, and 190 in a direct line,) is one of the chief naval arsenals of England. It is situated

in the s. w. extremity of Devonshire, at the mouth of the little river Plym, which falls into the eastern side of Plymouth Sound. The river Tamar enters the western side of the same estuary, and Plymouth (with the adjoining towns of Stonehouse and Devonport) occupies the ground included between the two streams. Plymouth contains numerous government establishments for the supply of military and naval stores, and the dockyard (which is at Devonport) is one of the finest in the kingdom: both Plymouth and Devonport are strongly fortified. At the entrance of the Sound is a magnificent breakwater, nearly a mile in length, formed of huge stones sunk in the sea, with a free passage for ships at its eastern and western extremities. Plymouth has considerable foreign and coasting trade, and many of the inhabitants are engaged in the pilchard and other fisheries (Art. 6).—On the s. e. coast of Devonshire, between the mouth of the Exe and Plymouth Sound, are several small seaports and fishing towns, some of which are much resorted to as watering-places and on account of the extreme mildness and salubrity of the climate (Art. 45): among these are *Teignmouth* (on the river Teign), *Torquay* (on the north side of Tor Bay), and *Dartmouth* (on the river Dart), the last of which possesses some coasting trade.—*Barnstaple*, a town of early Saxon origin (on the n. w. side of the county, 8 miles above the mouth of the river Tawe), has some manufactures of lace and pottery, and considerable general trade, being the principal port for a large inland district.—*Bideford*, near the mouth of the river Torridge, has both foreign and coasting trade, and ship-building is also carried on.—*Ilfracombe*, on the shore of the Bristol Channel, 9 miles north of Barnstaple, is extensively engaged in the herring-fishery, and has considerable coasting trade.—*South Molton*, on the river Mole (an affluent of the Tawe), possesses some lace and woollen trade.

Bodmin, an ancient town situated on the river Camel, or Alan, in the most central part of Cornwall, was formerly a place of more importance than at present. At its mouth the Camel forms the estuary of Padstow Haven, on the west side of which is the town of *Padstow*, which has some coasting trade.—*St. Austell*, 10 miles south of Bodmin, has valuable tin-mines in its neighbourhood, and *kaolin* (or porcelain-clay) of fine quality is also dug in the vicinity and exported to the Staffordshire potteries.—*Truro*, at the head of an estuary on the s. e. coast of Cornwall, is the capital of the mining district of this county, and exports great quantities of tin and copper ore; it has factories for converting the tin into bars and ingots, with founderies and other establishments connected with the mines.—*Falmouth* (on the west side of the estuary of Falmouth Bay) carries on considerable foreign and coasting trade, and is a station for foreign packets.—*Penzance*, on the n. w. side of Mount's Bay, has considerable trade, chiefly in the export of the mineral produce of the county. Both here and at various other ports on the coast of Cornwall the pilchard-fishery is largely pursued. Near the small town of *Marazion*, a short distance to the eastward, is *St. Michael's Mount* (whence the name of the bay is derived), a rocky promontory insulated at high water, with the remains of an ancient chapel on its summit, the tower of which rises to 250 feet above the sea.

WALES.

SIX COUNTIES IN NORTH WALES, all of which are agricultural, and Flint, Anglesey, and part of Denbigh also mineral, counties,

Counties.	Towns.
Flintshire	Holywell, 5800— <i>Mold</i> , 3500—Flint, 3200—St. Asaph, 1700.
Denbighshire . . .	Denbigh, 5200—Wrexham, 5800— <i>Ruthin</i> , 3200—Holt, 1000.
Caernarvonshire . .	<i>Caernarvon</i> , 8000—Bangor, 5000—Conway, 1800.
Anglesey	Holyhead, 3800—Amlwch, 3300— <i>Beaumaris</i> , 2700.
Merionethshire . . .	<i>Dolgelly</i> , 3000—Bala, 1200—Barmouth, 900—Harlech.
Montgomeryshire . .	Newtown, 6500—Welshpool, 2500— <i>Llanidloes</i> , 2700— <i>Montgomery</i> , 1200.

SIX COUNTIES IN SOUTH WALES, of which Glamorgan is chiefly a mining and manufacturing county, all the remainder agricultural.

Counties.	Towns.
Cardiganshire . . .	Aberystwith, 4900— <i>Cardigan</i> , 3800.
Radnorshire	<i>Presteign</i> , 1500—Knighton, 1200—New Radnor, 500.
Brecknockshire . . .	<i>Brecon</i> or <i>Brecknock</i> , 5700—Hay, 1400—Builth, 1100.
Glamorganshire . . .	Merthyr Tydvil, 35,000—Swansea, 16,800— <i>Cardiff</i> , 10,100—Neath, 5000—Llandaff, 1200.
Caermarthenshire . .	<i>Caermarthen</i> , 9500—Llanelly, 6800—Llandovery, 1700—Llan-dello, 1300.
Pembrokeshire . . .	Pembroke, 7400— <i>Haverford West</i> , 5500—Tenby, 2500—Milford, 3300—St. David's.

(62.) The towns in Wales are in general of small size; the only three which exceed ten thousand in the number of their inhabitants are Merthyr Tydvil, Swansea, and Cardiff, and these are all connected with the great coal-basin of South Wales,—the first-mentioned being the chief centre of mining industry, and the two latter its principal ports. Very few of the other places in the principality have more than 5000 or 6000 inhabitants.

The county of Flint, which embraces the larger portion of the North Wales coal-field (Art. 30), contains several small towns in the neighbourhood of which coal, lead, iron, and other mineral works, are carried on: among these are *Flint* (on the west side of the estuary of the Dee), *Holywell* (4 miles further to the westward), *Mold* (10 miles w. by s. of Chester), and *Hawarden* (towards the eastern extremity of the county). Near Hawarden are extensive potteries, and from the neighbourhood of Holywell large quantities of chert (a siliceous mineral, which is used in the manufacture of porcelain,) are sent to the Staffordshire and Shropshire potteries. Holywell derives its name from St. Winifred's well, a copious source of water to which miraculous powers were formerly attributed. Flint has some coasting trade, and is resorted to as a summer bathing-place.—*St. Asaph*, a small cathedral city, is situated on the west bank of the river Clywd, in the beautiful vale of that name (Art. 29).

Wrexham, in the east part of Denbighshire, is a considerable and thriving town; it lies on the border of the North Wales coal-field, and its prosperity is due to the stone-quarries, lead-mines, and collieries, in the immediate neighbourhood. It has also considerable markets for the sale of flannel and agricultural produce. Some miles to the s.w. is the beautiful vale of Llangollen, watered by the middle course of the Dee.

Conway (at the mouth of the river of that name) and *Bangor* (near the northern entrance to the Menai Strait) both derive present interest from the great tubular bridges of iron recently constructed in their immediate vicinity. By the former of these the line of the Chester and Holyhead Railway is carried across the mouth of the Conway; the latter, or Britannia Bridge, carries the railway across the Menai Strait, at a height of 100 feet above the level of the water. The total length of the Britannia Bridge is 1513 feet, of the Conway Bridge only 400 feet. Conway possesses the remains of a magnificent castle; Bangor has valuable slate-quarries in its neighbourhood. Upon the coast about midway between Bangor and the mouth of the Conway is the mountain called Penmaen Mawr, 1540 feet high, which descends to the sea-shore by a steep declivity.—*Caernarvon*, at the mouth of the little river Seiont, near the south end of the Menai Strait, is the largest town in North Wales, and has considerable trade, chiefly in the export of copper ore and slates. It is surrounded by a wall, and possesses the remains of the castle erected by Edward I. upon his conquest of the principality. Both Caernarvon and Bangor (and also Beaumaris, on the east side of the Isle of Anglesey,) are frequented as summer watering-places.

Holyhead, upon Holy Island, to the west of Anglesey, derives importance from its situation on the main line of communication between London and Dublin (Art. 108).—*Amlwch*, on the north coast of Anglesey, is the outlet for the valuable copper-mines worked in the Parys Mountain, which is 2 miles to the south of the town (Art. 31).

At most of the towns in the counties of Merioneth and Montgomery the making of flannels, stockings, gloves, and various woollen goods, is pursued by the inhabitants. *Bala*, in the former county, is situated at the northern extremity of the lake of that name.—*Barmouth*, on the coast (at the mouth of the river Maw), is frequented as a bathing-place.—*Welshpool*, *Newtown*, and *Llanidloes*, are all situated in the upper part of the valley of the Severn, and possess considerable woollen manufactures. The greater part of the Welsh flannel is made at Newtown, but Welshpool is the chief mart for the woollen produce of the district.

Cardigan (on the river Teify, 3 miles above its mouth,) and *Aberystwith* (at the mouth of the Rheidiol, further to the northward,) both possess some coasting trade: the latter has also extensive fisheries, and is frequented as a watering-place.—*Presteign* (Radnorshire), on the river Lugg, an affluent of the Wye, and immediately adjacent to the English border, has some trade in the agricultural produce of the neighbouring district.—*Brecon*, or *Brecknock* (in the county of that name), on the north bank of the river Usk, is also an extensive market for agricultural produce, and has some manufacture of flannels and coarse woollen cloth.

Merthyr-Tydfil, the most considerable place in Wales, is situated at the north-east extremity of Glamorganshire, in the upper part of the valley of the Taff. The greater part of its population are engaged in mining and smelting, and the town owes its prosperity entirely to the mineral wealth of the adjacent district: in its immediate neighbourhood are some of the largest iron-works in the kingdom. Merthyr is a straggling and irregularly-built place, great numbers of the houses being scattered about the valley and the sides of the adjacent hills.—*Cardiff*, at the mouth of the Taff, is the port of Merthyr, with which town it is connected both

by canal and railway; its trade in the export both of mineral and agricultural produce is considerable. In the castle of this town (part of which is now in ruins), Robert Duke of Normandy, the eldest son of the Conqueror, was a prisoner for twenty-eight years.—*Llandaff*, which contains an ancient cathedral, is only a village, situated about 2 miles above Cardiff, on the opposite side of the river.

Swansea, at the mouth of the river Tawe (on its west bank), is the chief place for the smelting of copper ores, which are brought for that purpose from the neighbouring shores of Cornwall, as well as from the most distant parts of the globe. It has also brass-works and extensive potteries, besides considerable cellieries, the produce of which is largely shipped. In the neighbourhood of the town are numerous tram-roads and railways, constructed in order to facilitate its communication with the various mineral works, and the completion of the South Wales Railway will place it in immediate railway connection with the metropolis. Owing to the beauty of its situation and the mildness of its climate (Art. 45), Swansea has become a favourite and much-frequented bathing-place.—*Neath* (7 miles N. E. of Swansea), on a river of the same name, has copper, iron, and tin works in its neighbourhood, and carries on considerable trade.—*Aberafon* (4 miles south of Neath), at the mouth of the little river Afon or Avon, has also important tin and copper mines. The rivers Tawe, Neath, and Avon, all flow into Swansea Bay.

Caermarthen, on the banks of the river Towy (20 miles above its mouth), possesses great coasting trade, exporting principally agricultural produce and importing various articles for the supply of other parts of the county.—*Llanelli*, 17 miles S. E. of Caermarthen (on the north side of a broad estuary formed at the mouth of the river Llŵchwr, or Loughor, and called Burry River), is within the limits of the coal district, and has extensive copper and iron works, the produce of which it exports, as well as great quantities of coal for the use of steam-vessels.—*Llandeilo* (13 miles N. E. of Caermarthen) and *Llandovery* (14 miles further to the N. E.) are small inland towns, both seated on the banks of the Towy.

Pembroke, situated on a navigable creek upon the south side of Milford Haven, has a government dock-yard in its immediate neighbourhood. It is a town of great antiquity, and possesses the ruins of a magnificent castle built in the time of William Rufus.—*Milford*, on the north side of the Haven, is a place of great resort for shipping, and has regular communication with the opposite coast of Ireland: it possesses also some American and Baltic trade.—*Haverford West*, on the little river Cleddy, which falls into the western of the two creeks into which the upper portion of Milford Haven divides, has great local trade, and is a mart for the agricultural produce of the county. The river is navigable at spring tides for vessels of 100 tons burden.—*St. David's*, 16 miles to the N. W., is situated at the north-western extremity of St. Bride's Bay; it contains a cathedral, and ranks as an episcopal city, but is now little more than a village. On the coasts both of Pembroke and Caermarthen are several small fishing towns, some of which are frequented as summer watering-places.

(63.) The principal *sea-ports* of England and Wales are enumerated in the following list, beginning at the northern extremity of the country, and proceeding in order round the island :

On the *east* coast, between the borders of Scotland and the mouth of the Humber, are—*Berwick* (at mouth of river Tweed), *Newcastle* (on the river Tyne), *Shields* and *Tynemouth* (mouth of ditto), *Sunderland* (mouth of river Wear), *Stockton* (on the river Tees), *Middlesborough* and *Port Clarence* (mouth of ditto), *Whitby* (mouth of river Esk), *Scarborough* (north of Filey Point), *Bridlington* (south of Flamborough Head), *Hull* (on river Humber), and *Goole* (at junction of river Don with Yorkshire Ouse).

Between the Humber and the estuary of the Thames are—*Grimsby* (south side of entrance to Humber), *Boston* (on river Witham), *Lynn* (mouth of river Ouse), *Yarmouth* (mouth of river Yare), *Lowestoft* (easternmost point of England), *Ipswich* (on river Orwell), *Harwich* (mouth of river Stour), *Colchester* (on river Colne), and *London* (on river Thames).

Between the mouth of the Thames and the South Foreland of Kent are—*Rochester* (on river Medway), *Sheerness* (Isle of Sheppy), *Faversham* (south side of estuary of Thames, near Isle of Sheppy), *Whitstable* (north coast of Kent), *Margate* (north side of Isle of Thanet), *Ramsgate* (east coast of ditto), and *Deal* (near South Foreland.)

On the *south* coast,—*Dover* (nearest point to opposite coast of France), *Folkestone*, *Rye* (mouth of river Rother), *Hastings*, *Brighton*, *Shoreham* (mouth of river Adur), *Portsmouth* (opposite Isle of Wight), *Southampton* (at head of Southampton Water), *Cowes* (north coast of Isle of Wight), *Poole*, *Weymouth* (mouth of river Wey), *Exeter* (on river Exe), *Dartmouth* (river Dart), *Plymouth*, *Fowey* (mouth of river Fowey, Cornwall), *Falmouth* (river Fal), and *Penzance* (west side of Mount's Bay).

On the *west* coast, between the Land's End and the mouth of the Severn, are—*St. Ives* (west coast of Cornwall), *Padstow* (mouth of river Alan, Cornwall), *Bideford* (mouth of river Torridge), *Barnstaple* (on river Tawe), *Ilfracombe* (entrance of Bristol Channel), *Bridgewater* (on the river Parret), *Bristol* (river Avon), and *Gloucester* (river Severn).

Between the mouth of the Severn and the estuary of the Mersey, are—*Chepstow* (mouth of river Wye), *Newport* (mouth of river Usk), *Cardiff* (mouth of river Taff), *Swansea* (Swansea Bay), *Milford* (Milford Haven), *Cardigan* (on river Teify), *Aberystwith* (on river Rheidiol), *Holyhead* (on Holy Island, near Isle of Anglesey), *Beaumaris* (on Menai Strait), *Chester* (on river Dee), and *Birkenhead* (west side of river Mersey).

Between the mouth of the Mersey and the head of the Solway Firth are—*Liverpool* (east side of Mersey), *Fleetwood* (mouth of river Wyre), *Lancaster* (on river Lune), *Ulverston* (on Morecambe Bay), *Whitehaven* (near St. Bees Head), *Workington* (mouth of river Derwent), *Maryport* (mouth of river Ellen), and *Carlisle* (on the river Eden).

(64.) The cities of Canterbury, York, London, Durham, Winchester, Lincoln, Carlisle, Rochester, Bath and Wells (united), Gloucester and Bristol (united), Exeter, Ripon, Salisbury, Peterborough, Worcester, Chichester, Lichfield, Ely, Oxford, Manchester, Hereford, Chester, and Norwich—in *England*; and Bangor, St. David's, St. Asaph, and Llandaff—in *Wales*, are cathedral cities. Canterbury and York are the seats of the two archbishops, and each of the remainder is the seat of a bishop's see.

(65.) The *Isle of Man* contains a population of 48,000, a large proportion of whom are engaged either in the mines, or in the herring-fishery, which is extensively carried on round its shores. Of its agricultural produce, about half consists of oats,—the remainder of wheat and barley, in equal portions. The climate is mild (the mean temperature of summer being 77°, of winter 26°, and of the year 49°), and the quantity of rain considerable. Grazing is carried on upon the hills; the horses or ponies, the oxen, and sheep, are all small and hardy. The wool of the latter is worked into stockings.

The island is divided into six *sheadings*, which comprise 17 parishes. It is the seat of an episcopal see, called the bishopric of Sodor and Man.

The towns contained in the Isle of Man, are Douglas, Castletown, Peel, and Ramsey, of which the largest is Douglas, situated on the east coast, and containing 8600 inhabitants. Castletown, however, is considered the capital of the island.

(66.) The *Channel Islands*, situated in the southern part of the English Channel, consist of Jersey, Guernsey, Alderney, Serk, and some smaller islets: though more nearly adjacent to the shores of France, they are a dependency of Great Britain. Their size and population are as follow:

	Area in square miles.	Population (in 1841.)
Jersey	62	47,500
Guernsey	23	26,700
Alderney	5	1000
Serk (with Herm) . .	3	800
Total	93	76,000

Jersey is mostly hilly, and well-watered. Guernsey is level in the north, but hilly in its southern part; it is also well-watered, but less generally fertile than Jersey. Alderney has high cliffs in its south-western part, whence it slopes gradually towards the north-east.

These islands consist almost entirely of granitic rocks, and sienite is largely quarried in Jersey and exported as granite. In the eastern part of

the same island, schistose and slaty rocks occur. Guernsey has no metals: iron and manganese exist in Jersey, but are not worked. The climate is mild, but moist, owing to frequent rains and the prevalence of sea fogs.

The agricultural produce, both of Jersey and Guernsey, is considerable, and consists chiefly of fruits and vegetables: apples are largely grown, and great quantities of cider are made. Potatoes are raised in large quantities. Both Jersey and Alderney are celebrated for a small kind of cow (called the Alderney cow), and Jersey exports a considerable quantity of butter and other dairy produce.

The fisheries of Jersey are valuable, and embrace the lobster, oyster, and cod, all of which are largely exported.

The Channel Islands have no manufactures of importance, but the making of boots and shoes is carried on to some extent in Jersey, and in Guernsey the making of cements, bricks, cordage, paper, and soap, is pursued on a small scale. Ship-building is carried on to a considerable extent in Jersey.

The trade of both the larger islands is considerable; it consists in the export of agricultural produce (apples, cider, pears, potatoes, &c.), building-stone, and the produce of the fisheries;—and the import of manufactured goods and coals, from England,—wine and brandy from France,—sugar and coffee from Brazil, timber from Sweden and Norway, with hemp, tallow, wheat and barley, from Russia and the other countries adjacent to the Baltic. Many of these, however, are again exported, as the peculiar privilege which these islands enjoy, in the almost total exemption from taxation, gives encouragement to this kind of traffic.

The inhabitants of the Channel Islands are a mixed race, and speak a corrupt dialect, composed both of the French and English tongues. French is the language of the upper classes, and is used in the churches and courts of law; but the English is now becoming more generally prevalent.

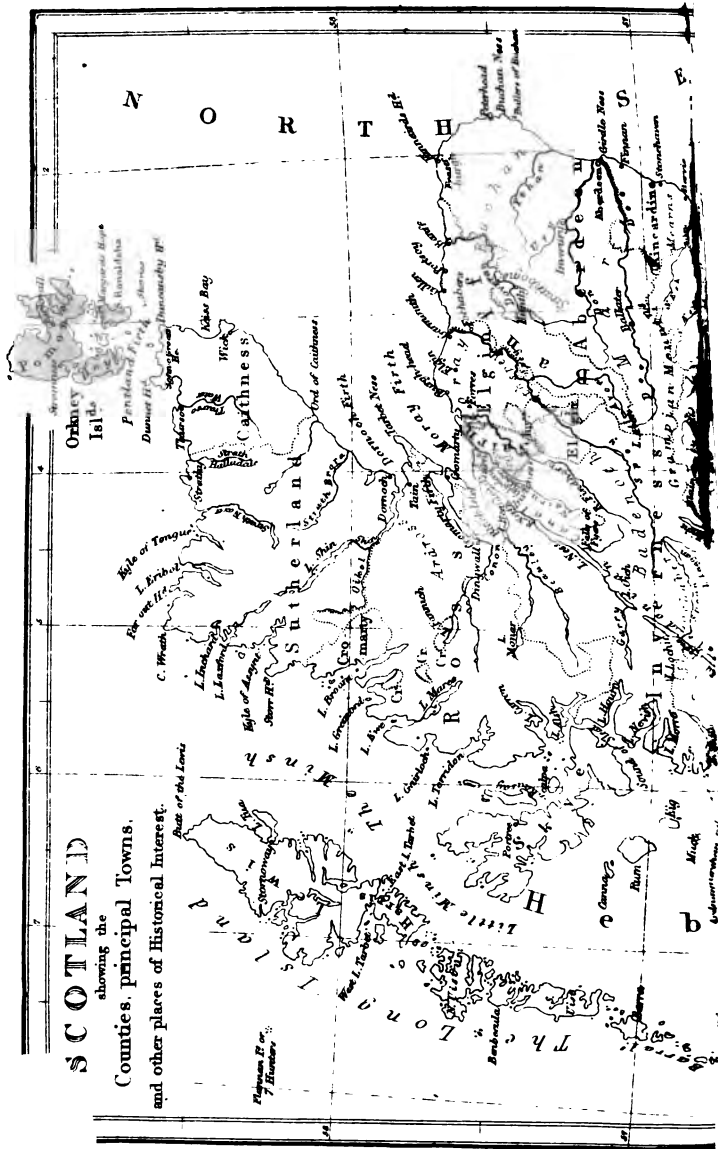
The capital of Jersey is *St. Helier*, a small town situated on the south side of the island (population 10,000).

The chief town of Guernsey is *St. Pierre*, on the east coast, with 11,000 inhabitants.

Alderney is a dependency of Guernsey: it has no good harbour. The channel between Alderney and Cape la Hague, on the coast of France, is called the Race of Alderney, and is rendered dangerous by the strength and rapidity of its tides. The established religion in the Channel Islands is that of the English church, and they are included within the see of Winchester.

SCOTLAND

showing the
Counties, principal Towns,
and other places of Historical Interest.



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SECTION II.

S C O T L A N D.

(67.) *Extent and boundaries.*—Scotland constitutes the northern portion of the island of Great Britain. It is bounded on the north and west by the Atlantic Ocean, on the south by England and part of the Irish Sea, and on the east by the North Sea.

The most northern point of the mainland of Scotland is Dunnet Head (lat. $58^{\circ} 41'$), and the most southern, the Mull of Galloway (in lat. $54^{\circ} 38'$). A line drawn between these two points measures 288 miles.

The most eastern point is the headland called Buchan Ness (long. $1^{\circ} 46'$ w.),—the most western, Ardnamurchan Point (long. $6^{\circ} 13'$ w.).

The breadth of the country varies greatly, and is in some places much diminished by the firths and narrow salt-water inlets, or lochs, which penetrate into the body of the land. Between the opposite shores of the Firths of Forth and Clyde (nearly under the line of the 56th parallel), the land is less than 40 miles across from sea to sea. Thence northward to the parallel of the Moray Firth, the breadth varies between 100 and 150 miles, but in the most northern portion of the country is again diminished to from 40 to 50 miles.

A correct idea of the shape of Scotland will be obtained by drawing straight lines between some of the principal points of its coast, in the following manner:

	Miles.
A line drawn from the mouth of the river Tweed to St. Abbs Head (lat. $55^{\circ} 55'$, long. $2^{\circ} 8'$ w.) measures	12
From St. Abbs Head to North Ferry Point, Fifeshire, at the narrowest part of the Firth of Forth (lat. $56^{\circ} 1'$, long. $3^{\circ} 23'$)	49
From North Ferry Point to Fife Ness (lat. $56^{\circ} 17'$, long. $2^{\circ} 35'$)	37
From Fife Ness to Button Ness (lat. $56^{\circ} 28'$, long. $2^{\circ} 44'$)	14
From Button Ness to Buchan Ness (lat. $57^{\circ} 28'$, long. $1^{\circ} 46'$)	79
From Buchan Ness to Kinnairds Head (lat. $57^{\circ} 42'$, long. 2°)	18
From Kinnairds Head to the entrance of Cromarty Firth, between the headlands called the Suters of Cromarty (lat. $57^{\circ} 41'$, long. 4°)	73
From Cromarty Firth to Duncansby Head (lat. $58^{\circ} 38'$, long. $3^{\circ} 1'$)	75
From Duncansby Head to Cape Wrath (lat. $58^{\circ} 38'$, long. 5°)	72
From Cape Wrath to Ardnamurchan Point (lat. $56^{\circ} 45'$, long. $6^{\circ} 13'$)	138
From Ardnamurchan point to a point of land on the south side of the entrance to Loch Etive, Argyleshire (lat. $56^{\circ} 28'$, long. $5^{\circ} 28'$)	35
From the last point to the Mull of Cantire (lat. $55^{\circ} 17'$, long. $5^{\circ} 46'$)	80
From the Mull of Cantire to Cloch Point, at the entrance of the Clyde (lat. $55^{\circ} 58'$, long. $4^{\circ} 52'$)	57
From Cloch Point to Ayr Head, near the mouth of the river Ayr (lat. $55^{\circ} 26'$, long. $4^{\circ} 43'$)	38

	Miles
From Ayr Head to Corsill Point (lat. $55^{\circ} 1'$, long. $5^{\circ} 9'$)	35
From Corsill Point to the Mull of Galloway (lat. $54^{\circ} 38'$, long. $4^{\circ} 52'$)	28
From the Mull of Galloway to the head of the Solway Firth (lat. $54^{\circ} 59'$, long. $3^{\circ} 3'$)	76
• From the head of the Solway Firth to the mouth of the Tweed	69

The area of Scotland, exclusive of the numerous islands which belong to it, is 26,014 square miles. The total length of the above lines (exclusive of the last, which passes wholly over the land) is 916 miles; but the numerous indentations upon the shores of Scotland, especially upon the western side of the country, cause the linear extent of the coasts to be really much greater. Including all the salt-water inlets and estuaries, the entire length of the coast-line of Scotland is probably not less than 2500 miles, a greater length than that of the English coast, and bearing a much larger proportion to the area of the mainland than is the case in the southern part of the island.

(68.) *Capes*.—On the east coast—St. Abbs Head (county of Berwick), 286 ft. high—Fife Ness (Fifeshire)—Button, or Buddon, Ness (Forfar)—Girdle Ness (Kincardine)—Buchan Ness (Aberdeen), 130 ft.—Kinnairds Head, (*ibid*)—Tarbet Ness (Ross-shire), 175 ft.—and Duncansby Head (Caithness), the north-eastern extremity of the country.

On the north side is Dunnet Head (Caithness), 346 ft., the most northern point of the land.

On the west coast, the principal are C. Wrath (Sutherland), 600 ft., the n. w. extremity of Scotland.—Ardnamurchan Point (Argyle)—Mull of Cantire (at the south extremity of the peninsula of that name, Argyleshire)—Corsill Point (at the entrance of Loch Ryan, Wigtonshire)—Mull of Galloway (*ibid*), 325 ft.—and Burrow Head (*ibid*), the south extremity of the peninsula between Glenluce and Wigton Bays.

(69.) *Coasts*.—The most northern part of the coast of Scotland, between Dunnet Head and Cape Wrath, is formed by high cliffs, which also extend along great part of its western shores. To the south of Lake Linnhe, however, round the peninsula of Cantire and the Firth of Clyde, the shores are generally low, and also between the Mull of Galloway and the head of the Solway Firth.

On the eastern side, the coast from Tarbet Ness, round the Murray Firth, to the high promontory of Buchan Ness, and thence southward to the mouth of the Dee, is generally low and sandy, excepting in some portions of small extent. In a part of this tract which extends on both sides of the river Findhorn are loose and shifting sands, which, combined with the action of the tide, have caused considerable changes in the line of coast. South of the river Dee, cliffs line a great part of the coast as far as the town of Arbroath (lat. $56^{\circ} 33'$). Thence round the Firth of Tay, a peninsula of Fife, and the Firth of Forth, the coast is generally flat,

though the hills in some places approach very near the shore. A few miles before reaching St. Abbs Head, however, the coast again becomes high and rocky, and continues so thence to the mouth of the Tweed.

Estuaries, Lochs, &c.—The east coast of Scotland, though less indented than the western, has some extensive inlets, or firths. These are, the Firth of Forth, the Firth of Tay, the Moray or Murray Firth (the upper part of which divides into Loch Beauley and the Firth of Cromarty), and Dornoch Firth.

On the north coast the principal indentations are Dunnet Bay, the Kyle of Tongue, and Loch Eribol,—the two latter of which are narrow inlets resembling the lochs of the western side of the country.

On the west coast the principal inlets (proceeding from north to south) are, the Kyle of Assynt, Loch Broom, Loch Ewe, Loch Torridon; Loch Carron, Loch Alsh, Loch Houra, Loch Nevish, Loch Sunart, Loch Linnhe, Loch Levin, Loch Etive, Loch Fyne, the Firth of Clyde, Loch Long, Loch Ryan, Glenluce Bay, Wigton Bay, and the Solway Firth, which forms part of the division between Scotland and England. Excepting the three last mentioned, with the Firth of Clyde and the Solway Firth, all the above are narrow inlets, which penetrate into the heart of the mountain region, like the fiords on the western coast of the Scandinavian peninsula. The narrow shores of these lochs afford shelter to men and cattle against the fury of the Atlantic storms, and so render this portion of the coast capable of habitation.

The long and narrow peninsula of Cantire, nowhere more than eight miles across, is also a peculiar feature of the western coast. At one point it is contracted to little more than a mile in breadth.

The arm of the sea between the northern extremity of Scotland and the group of the Orkney Islands is called the *Pentland Firth*, which is distinguished by the extraordinary strength and rapidity of its tides and currents. Between the large island of Skye and the mainland is the *Sound of Sleat*. The channel which divides the island of Mull from the opposite coast is called the *Sound of Mull*, and that which separates the Island of Jura, the *Sound of Jura*. Between the islands of Jura and Islay is the *Sound of Islay*. The narrow passage round the north and north-west sides of the island of Bute is called the *Kyles of Bute*.

Between the main group of the Hebrides and the western coast is the broad channel of the *Minsh*, the southern portion of which, narrowed by the island of Skye, is distinguished as the *Little Minsh*.

The seas around the shores of Scotland are generally deeper than those which lie off the English coasts. In the parallel of the Firth of Forth, the central part of the North Sea has a mean depth of 240 feet,—off Tarbet Ness, about 300 feet,—and off the Shetlands, above 500 feet. Nearer inland, off the entrance to the Firth of Forth, the mean depth of the sea is about 170 feet,—off the Firth of Tay, about 90 feet; thence further

northward to the parallel of Aberdeen, it preserves a mean depth of from 200 to 260 feet at a distance of about 10 miles from land. At the entrance of the Moray Firth (to the south-east of Tarbet Ness) the mean depth of the channel is from 120 to 150 feet.

On the Atlantic side the sea is generally deep near the shores, and attains a depth of 600 feet (100 fathoms) at a distance of from 90 to 120 miles from the mainland. It then sinks suddenly to upwards of 200 fathoms.

(70.) Scotland is divided into thirty-three counties, the names of which are as follow (beginning with those adjacent to England, and proceeding northward) :

Berwick.	Renfrew.	Banff.
Haddington.	Lanark.	Elgin.
Edinburgh.	Dumbarton.	Nairn.
Linlithgow.	Stirling.	Bute.
Roxburgh.	Clackmannan.	Argyle.
Selkirk.	Kinross.	Inverness.
Peebles.	Fife.	Ross.
Dumfries.	Perth.	Cromarty.
Kirkcudbright.	Forfar.	Sutherland.
Wigton.	Kincardine.	Caithness.
Ayr.	Aberdeen.	Orkney and Shetland.

(71.) *Natural features of surface.*—Scotland is in general a mountainous country. The ancient and native division of its surface is into the *Highlands* and the *Lowlands*. The highlands occupy the northern and western portions of the country,—the lowlands the southern and eastern parts. But for the purpose of geographical description, it will be best to regard it as divided into three parts, which we may distinguish as northern, middle, and southern, Scotland.

Northern Scotland is naturally divided from the rest of the island by a long narrow valley, or glen (Glenmore), which extends from the Murray Firth to Loch Linnhe, in the direction of N. E. and S. W. Through this valley the Caledonian Canal has been formed. The division between Middle and Southern Scotland consists of a plain which stretches across the island between the Firths of Forth and Clyde, and which is only at a trifling elevation above the sea.

Northern and Middle Scotland belong chiefly to the highlands, but portions of lowland extend along the eastern coasts, between the termination of the high mountain tracts and the sea. Southern Scotland is entirely comprised within the region of the lowlands, though it contains elevated masses of considerable extent.

(72.) *Southern Scotland.*—The highest part of the Plain of Clyde and Forth is 222 feet above the sea-level. The country which extends thence to the borders of England belongs naturally to the same physical region as the northern portion of that country. It consists chiefly of upland plains, upon which elevated masses of land rise in many places into hills of considerable height. The valleys of the rivers form depressions in the generally high and undulating surface of the region, and their sides present the appearance of sloping hills, usually of rounded form, and wanting the rugged features of mountain scenery which distinguish the more northern portions of the country. Isolated summits and hill-masses occur, but not continuous ranges of any extent.

The principal mass of the high lands of southern Scotland lies in an east and west direction, and forms in its eastern portion the dividing chain of the Cheviot Hills (Art. 14). This elevated land separates the valleys of the Tweed and the Clyde from the Nith and other rivers of the Solway Firth. Its greatest elevation is attained towards the central portion of the whole region, in the tract of the Lowther Hills, near the junction of the counties of Lanark, Dumfries, and Peebles, and around the upper valleys of the Clyde and the Tweed. The summit of Broad Law, to the east of upper Tweedale, and about 12 miles south-west of the town of Peebles, is 2741 feet above the sea, and appears to be the highest elevation in this part of Scotland.

The high lands here, and around upper Clydesdale, spread out for many miles north and south, and consist of barren, bleak, and rounded masses, which present to appearance a confused heap of rugged mountain tops. Several high summits occur along the principal line of watershed, at the head of the tributary valleys (or *dales*) which belong to the Tweed basin. Hart Fell, at the head of Tweedale, is 2635 feet above the sea. Ettrick Pen, further to the eastward, 2258 feet. Queensbury Hill, near the source of the Clyde, is 2259 feet, and the highest of the Tintoe Hills (further to the northward, in the angle between the Clyde and its tributary the Douglas), 2306 feet. The village of Leadhills, near the borders of Lanark and Dumfries, and on the west side of upper Clydesdale, is 1280 feet above the sea, and is said to be the highest inhabited place in Great Britain. On the east side of the narrower portion of the Firth of Clyde (in the north-west part of Ayrshire and the adjacent part of Renfrew) is a detached range of heights, the principal summit of which is the Mistie Law, 1240 feet above the sea.

To the west and south-west of the line of watershed above described, is an extensive elevated region, of irregular surface, which reaches nearly to the shores of the Irish Sea and the North Channel, and in which no continuous mountain ridge can be traced, though numerous high masses occur. Among the latter are Black Larg (at the point of junction of the three counties of Ayr, Dumfries, and Kirkcudbright), 1950 feet; Cairnmoor (south-west of the preceding, and to the east of Loch Doon), 2597 feet; and Larg Fell (in the south-west part of Kirkcudbright), 1758 feet. Criffell, on the west side of the mouth of the Nith, an isolated mass, of rounded form, is 1830 feet high.

The high ground which divides the upper valleys of the Clyde and Tweed is connected with the range of the Pentland Hills, which extends from the neighbourhood of Edinburgh in a general south-west direction

The highest of the Pentland Hills is 1860 feet above the sea: Arthur's Seat, an eminence adjacent to Edinburgh (on the south-east side of the city), is 822 feet, and the rock upon which Edinburgh Castle is built 434 feet, above the sea.

From the southern part of the Pentland Hills, a range of high land runs eastward to the coast at St. Abbs Head, and separates the basin of the middle and lower Tweed from the valley of the Tyne (of Had-dington). The western portion of this range is called the Muirfoot Hills,—the eastern and wider portion, the Lammermuir Hills. The highest of the Muirfoot Hills is 2193 feet;—in the Lammermuir, Spartle-down Hill, the highest summit, is 1700 feet, and several others are of nearly equal elevation. The highest parts of the Lammermuir are chiefly moss or moor land, but in the glens and lower tracts between the hills is much valuable land, which is under regular cultivation.

The principal *plains* in this portion of Scotland are the lower portion of the Clyde Valley (Clydesdale),—the plain of Ayrshire, which forms a kind of amphitheatre enclosed by hills on three sides,—the narrow plain along the shores of the Solway Firth,—the lower part of the valley of the Tweed, which is of limited extent, owing to the near approach of the high grounds on either side,—and the valley of the small river Tyne (of Had-dington). The high pastoral valleys which penetrate into the mountain region are generally known by the name of *dales*, as Tweedale, Teviot-dale, and Lauderdale, belonging to the basin of the Tweed,—and Liddesdale, Eskdale, Annandale, and Nithsdale, sloping towards the shores of the Solway Firth.

(73.) *Middle Scotland* extends from the Plain of the Clyde and Forth to the narrow valley of Glenmore. More than three-fourths of this tract of country is occupied by a high mountain region, a large portion of which is at an elevation of upwards of 1000 feet above the sea. Upon this elevated base rise the highest mountains in the British Islands.

A succession of high mountain-masses stretches across the island in an east and west direction, from the shores of the North Sea to the southern extremity of Glenmore: this forms the chain of the *Grampian Mountains*, the eastern extremity of which coincides with the line of the 57th parallel of latitude. The Grampian Mountains measure nearly 100 miles in length, from east to west, and their higher summits have an average elevation of from 2000 to 3000 feet above the sea. At the western extremity of the chain, near the shores of Loch Linnhe, is Ben Nevis, a huge mass, 4374 feet in height, and until lately considered as the culminating point of the system. But in a range which branches off to the northward of the principal chain, under the meridian of $3^{\circ} 50' \text{ w.}$, the group of the Cairngorm Mountains (on the north side of the valley of the Dee) appears from recent measurements to contain the highest land in Great Britain. The summit of Ben Mac Dhui, in this group, is 4390 feet, and that of Cairngorm 4095 feet, above the sea.*.

*The Grampians do not rise to the proper height of perpetual congelation, which in their latitude would be about 150 above the elevation of

On the north side of the Grampians a high and mountainous tract extends nearly to the shores of the North Sea and the Moray Firth,—diminishing, however, in elevation as it approaches the coast, near which the valleys of the rivers (or *straths*) widen out into plains of limited extent. The high ground which extends immediately to the north of the Cairngorm group, along the eastern side of Strath Spey, is distinguished as the Braes of Abernethy, a large portion of which is covered with magnificent pine forests. On the west side of the Spey is a continuous range (not, however, connected with the central chain) called the Monadh Leadh Mountains, the higher portions of which are about 2000 feet above the sea.

From Ben Nevis, a succession of high mountain-masses extend southward to the shores of the Firth of Clyde: these are sometimes distinguished as the Southern Grampians. They do not form any continuous range, but contain huge masses of great extent and considerable height. Amongst them is Ben Cruachan (near the northern extremity of Loch Awe), which is 20 miles in circumference and 3390 feet in elevation. High mountains line the western side of Loch Long, and extend through the peninsula between that lake and Loch Fyne, down to the shores of the narrow channel which separates the island of Bute from the mainland.

The country to the east of this southward extension of the Grampians, and to the south of the principal chain, contains numerous high summits,—among which are Ben Lomond (on the east side of the lake of that name), 3191 feet,—Ben More (on the south of Loch Dochart, in the south-west extremity of Perthshire), 3818 feet,—Ben Lawers (on the west side of Loch Tay), 3945 feet,—and Schehallion (north-east of the latter-named mountain), 3514 feet, above the sea.

A considerable portion of the mountain region above described, and lying chiefly towards its western boundary, is occupied by the Moor of Rannoch—a high plain which stretches to the north-eastward of Ben Cruachan, and which is elevated about 1000 feet above the level of the sea. This tract extends over nearly 400 square miles of country, which is a complete desert: its surface forms an open and nearly level plain, covered by an immense bog, which produces no vegetation of any kind, except on the immediate banks of Loch Lydoch, round which are a few fir-trees. To the north of this desolate region is a tract of equally sterile character, lying between Ben Nevis and the shores of Loch Erich, and which exhibits nothing but bare rocks, interspersed with numerous bogs.

The mountain region which lies to the south and south-east of the Grampians does not reach the shores of the North Sea, but terminates

their highest summits). But in the dark recesses of the Cairngorm group the snow sometimes remains all the year round, and the surface of Loch Avon—a small lake situated in the heart of this high and desolate region, at an elevation of 1750 feet, and overhung by the precipitous sides of the mountains—has no sunshine for several of the winter months. It is a clear and beautiful sheet of water, on the banks of which, however, no shrub, or living creature of any kind, is seen,—except when its solitude is disturbed by the occasional visit of a straggling red deer from the neighbouring pine forests, or by the presence among its almost inaccessible cliffs of the eagle or the ptarmigan.

on the east in a long and narrow plain, which extends from the neighbourhood of Stonehaven (on the coast of Kincardineshire), in a south-west direction, to the banks of the River Forth, above Stirling. This plain is called *Strathmore*, and is the most continuous extent of level and cultivable land in Scotland. Its total length from north-east to south-west is about 80 miles: its breadth varies from 16 miles in its widest part to less than a mile at its northern extremity. Throughout its whole length there is scarcely a hill or any eminence to obstruct the view. The greater portion of this plain is under cultivation, and produces rich crops of barley and other grain, together with potatoes. The plain of Strathmore forms the eastern termination of the Highlands.

Two ranges of hills intervene between Strathmore and the shores of the North Sea,—the *Sidlaw Hills*, to the north of the Firth of Tay,—and the *Ochill Hills*, between the Firths of Tay and Forth.

The *Sidlaw Hills* commence in the neighbourhood of Perth, and extend thence in a north-east direction; their highest elevations are about 1400 feet above the sea. They terminate by a rapid declivity on the side of Strathmore, but descend by a succession of terraces towards the shores of the North Sea. On the south of the Sidlaw Hills, along the shores of the Firth of Tay, is a plain of 2 or 3 miles in breadth, called the Carse of Gowrie—one of the most fertile and beautiful tracts in Scotland. Abundant crops of every kind of grain are raised here, and its orchards produce great quantities of the finest fruit.

The *Ochill Hills*, with their offsets and outlying branches, occupy the greater part of the peninsula of Fife, and exhibit some masses of considerable elevation. Ben Clach (5 miles north by east of Alloa) is 2359 feet above the sea, and the highest of the Lomond Hills, to the north-east of Loch Leven, 1280 feet. The hills in general leave a narrow belt of lowland round the shores of the peninsula, though in some cases they advance close to the coast. Largo Law, a hill on the north side of the Firth of Forth, is 952 feet in height.

The level region of Strathmore is divided from the plain between the Clyde and Forth by a low range of heights called the *Campsie Fells*, which extend from the neighbourhood of Stirling, on the Forth, to the banks of the Clyde, at Dumbarton. Their highest elevations are about 1500 feet above the sea; the rock on which Dumbarton Castle is built is 560 feet high.

(74.) *Northern Scotland*.—The narrow valley of Glenmore,* which divides the regions of northern and middle Scotland, is the most marked and singular feature in the physical conformation of the island. Its entire length, from Fort George, at the head of the Moray Firth, on the north-east, to the Sound of Mull on the south-west, is about 100 miles. The north-eastern extremity of the glen is occupied by the waters of the Murray Firth; its south-western extremity by Loch Linnhe, and its northward prolongation, Loch Eil. In its middle portion are

* Properly *Glen-more-nan-Albin*, the great glen of Albin, or Albion.

three long and narrow lakes, Loch Ness, Loch Oich, and Loch Lochie: the largest of these is Loch Ness, which discharges itself by the River Ness into the Moray Firth. The waters of Loch Oich flow into Loch Ness by the River Oich, and Loch Lochie is discharged into Loch Linnhe by the small River Lochie, so that with the exception of about a mile and a half of ground intervening between Lochs Oich and Lochie, the northern portion of Scotland is naturally insulated from the rest of the island. The formation of the Caledonian Canal has connected all these lakes by navigable channels, and completed the water communication between the seas on the opposite shores of this portion of Britain.

The mountains on either side of Glenmore rise with a steep and rugged ascent to a considerable height, averaging upwards of 1000 feet in the neighbourhood of Loch Ness. On the western shores of this lake is the high mountain of Mealfourvouny, 2730 feet above the sea.

The portion of Scotland which lies to the west and north-west of Glenmore consists chiefly of an elevated table-land, which in its central part is about 1000 feet above the sea-level, and in some portions probably not less than 1500 feet. Ben Wyvis, to the west of Cromarty Firth, rises to the height of 3720 feet; the mountain called Ben Attow (on the borders of Ross and Inverness, to the eastward of Loch Alsh) is about 4000 feet high. Many other summits in this portion of Scotland are between 2000 and 3000 feet in elevation. The highest mountain-masses lie in general nearer the western than the eastern coasts, and terminate abruptly on the shores of the Atlantic.

This mountainous tract, (which may be appropriately distinguished as the Northern Highlands,) although it does not attain the great elevation of the Grampians, yet exhibits in some parts a character of greater wildness and rocky desolation than any other part of Scotland. Nearly the whole region is, in fact, a naked and barren mountain wilderness, alternating between high mountains and tracts of open moorland, covered with heath and bog.

The level districts of Northern Scotland probably do not occupy more than a twentieth part of its entire surface. They extend, at intervals, along the eastern coast, from the shores of Loch Beauley and the Moray Firth to the northern extremity of the island, in the neighbourhood of the two capes of Duncansby and Dunnet Head, and form two principal plains,—those of Cromarty and Caithness, the latter of which is of the larger extent. The *Plain of Cromarty* extends along both sides of the firth of that name, and thence across to the Firth of Dornoch: it contains some fertile and well-cultivated tracts.

The *Plain of Caithness* comprehends about four-fifths of the county of that name, embracing however some moorland tracts elevated from 200 to 300 feet above the sea, and which afford good pasturage. Agriculture is confined to the level tracts along the water-courses and the slopes of the higher plains.

(75.) *Islands*.—The islands of Scotland form four gro

or archipelagos—the islands in the Firth of Clyde, the Hebrides, the Orkney Islands, and the Shetland Islands. The northernmost of these groups, the Shetland Islands, extends to the parallel of $60^{\circ} 49'$, and forms the most outlying portion of the British Archipelago in that direction:—the island of St. Kilda, the most western of the Hebrides, is under the meridian of $8^{\circ} 37' \text{ w.}$

It has been estimated that the Shetland Islands occupy an area of 880 square miles, the Orkneys 440, the Hebrides 2585, and the islands in the Firth of Clyde 165 square miles, making a total of 4070 square miles. This, added to the extent of the mainland (Art. 67), gives 30,084,—or, in round numbers, about 30,000,—square miles, as the entire area of Scotland.

(76.) *Islands in the Firth of Clyde.*—These consist of the large islands of Bute and Arran, the small islets of Great and Little Cumbray, and the rock of Ailsa. Arran measures 20 miles in length by 11 in breadth. It consists of a mass of heathy mountains surrounded by a narrow belt of lowland: the mountains are highest towards the north, where Goat Fell, the loftiest summit, rises to 2865 feet. Only a small portion of the land is cultivable, and is not generally fertile.

Bute measures 16 miles in length by five in breadth. Its northern extremity is bleak and rugged, but the central and southern portions consist of undulating ground, fit either for tillage or pasturage, and affording good crops of barley and oats.

The islands of Great and Little Cumbray lie at the entrance of the narrower portion of the Firth of Clyde, between the island of Bute and the mainland. Their surface is hilly and verdant, but bare.—Ailsa Crag, in the broad part of the Firth of Clyde, is an insulated hill, about two miles in circumference, and rising in precipitous cliffs to 1098 feet above the sea. It is the resort of enormous numbers of sea-fowl.

(77.) *The Hebrides, or Western Islands of Scotland,* consist of two portions,—those which lie adjacent to the mainland, as Jura, Islay, Mull, Skye, and others, distinguished as the *Inner Hebrides*—and those situated to the west of the channel of the Minsh, which form the *Outer Hebrides*.

The largest of the Inner Hebrides is Skye, (535 square miles,) which is covered with mountains, the highest about 3000 feet in elevation. The cliffs on its south-west coast are 750 feet in height. Between the north part of Skye and the mainland are the islands of Rona, Raasay, Scalpa, and others: off its south-west side are Canna, Rum, Eig, and Muck—all mountainous. Further to the south are Coll and Tiree, of less elevation. Eleven miles south-west of the last-mentioned island is the Skerryvore, a dangerous group of rocks, upon which a lighthouse has recently been erected.

Mull (301 square miles) is mountainous, and its highest summit, Ben More, rises to 3168 feet. Off its south-west coast is the small island of Iona, or Icolmkill, the seat of ancient civilization, and celebrated for its ecclesiastical remains; and, a few miles further north, the basaltic islet of Iona, remarkable for its magnificent cavern.

Jura (84 square miles) and *Islay* (308 square miles) are separated by the Sound of Islay. In the former island, the Paps of Jura rise to 2470 feet in height. Islay, though hilly, is less elevated, and contains a larger proportion of cultivated land than any other of the Hebrides. Between Islay and Mull are the islands of *Colonsay* and *Oronsay* (together 12 square miles), the narrow channel between which is dry at low water, when they form one island.

The Outer Hebrides form a continuous group, of 140 miles in length, so close that they are commonly considered as one, and named the *Long Island*. The largest consists of two portions, *Lewis* (557 square miles), and *Harris* (191 square miles), united by a narrow isthmus. Further south are the large islands of *North Uist* (118 square miles), *Benbecula* (43 square miles), and *South Uist* (127 square miles), besides an immense number of smaller islets. On the west side of Lewis the mountains rise to 2700 feet in height,—in Harris to 2220 feet. Mount Heval, in the island of North Uist, is 2010 feet, and Hekla, in South Uist, 2940 feet. Harris is generally mountainous, but a large portion of Lewis consists of tracts of moss and moorland. The most northern point of the Outer Hebrides is called the Butt of Lewis; to the south, they terminate in the group of the Barra Islands, the most southward of which forms the rock of Barra Head.

The island of *St. Kilda*, which lies 42 miles to the westward of the Long Island, is about 3 miles in length by 2 in breadth, and rises to 1380 feet above the sea. Except at the landing-place on its south-west side it is fenced round by inaccessible precipices. It is resorted to by immense numbers of sea-fowl, upon which the inhabitants are mainly dependent for subsistence. Still further to the westward, at a distance of 180 miles from the nearest land, is the little islet of *Rockall*, which is uninhabited.

(78.) The *Orkney Islands*, divided from the mainland by the Pentland Firth, comprise Pomona (or Mainland), Hoy, North and South Ronaldsha, Westra, and many others, amounting altogether to 67 in number, 40 of which are uninhabited. The highest elevation, in Hoy Island, is 1590 feet.

The *Shetland Islands* exceed 100 in number, of which between 30 and 40 are inhabited. The largest, Mainland, is 52 miles in length, and of very irregular shape. The next in size are Yell, Unst, Fetlar, Whalsay, and Bressay. Mount Rona, in the north of Mainland, is 1470 feet: the island of Foula, to the west of the principal group, 1350 feet. About midway between the Orkney and Shetland groups is *Fair Island*, 708 feet high.

The surface of both the above groups consists in general of dreary and heathy wastes, interspersed with rocks, and sometimes varied by swamps and lakes. In some parts, however, particularly in Orkney, the land is very fertile, and produces good corn and herbage. The climate is moist, but equable. The Shetland islands are in general more rugged, wet, and barren, than the other group. They are generally fenced, particularly on their western side, with high and precipitous cliffs, against which the ocean dashes with great fury, and which its waves have worn into the most various and fantastic forms.

There are a few detached islets off the eastern coasts of Scotland. consist of, the *Bas Rock* (on the south side of the entrance of ' of Forth), a mass of basalt, which rises perpendicularly to 400

the sea; *May Island*, *Inchkeith*, *Inchcolm*, and others, all in the Firth of Forth; and the *Inch Cape*, or *Bell Rock* (14 miles east of the entrance to the Firth of Tay), the site of a celebrated lighthouse. At the eastern extremity of the Pentland Firth are some rocks called the *Pentland Skerries*.

(79.) *Rivers*.—With the exception of the Clyde and the Nith, all the principal rivers of Scotland flow into the sea on the eastern side of the island. The closer approach of the high lands of Middle and Northern Scotland to the western than the eastern shores prevents the formation of streams of any considerable length in the former direction.

On the east side of Scotland, the principal rivers (enumerated from the borders of England northward) are,—the Tweed, the Tyne (of Haddington), the Forth, the Leven, the Eden, the Tay, the South and North Esk, the Dee, the Don, the Doveran, the Spey, the Findhorn, and the Ness.

On the south and west coasts are the Esk, the Annan, the Nith, the Dee (of Kirkcudbright), the Cree, the Doon, the Ayr, the Irvine, and the Clyde, all of which belong to the lowland or southern portion of Scotland.

The most considerable river of Scotland, both in regard to length of course and area of drainage, is the *Tay*, which has a course of about 100 miles from its source to the town of Perth, 7 miles below which it enters the estuary called the Firth of Tay. The Tay drains an area of about 2400 square miles,—more than one-eleventh part of the whole mainland of Scotland. Of its affluents, the principal are the Earn and the Almond, on its right bank, and the Lyon, the Tumel, and the Isla, on the left. The Tumel rivals the Tay in volume of water and extent of drainage above their junction, and (with its tributary, the Garry,) brings down the water from an extensive system of lakes adjacent to the high district of Rannoch Moor* (Art. 73). The Tay is not navigable above Perth, which is also the limit of the tide-water.

The *Tweed* has a length of 96 miles, and drains an area of 1870 square miles. The tide ascends this river about 10 or 12 miles, but it is not navigable above Berwick. From its source to its mouth the Tweed has a fall of upwards of 1500 feet: it is noted for its salmon fisheries,—and, during certain seasons, is liable to considerable floods. The chief tributaries of the Tweed are the *Ettrick* (with its affluent, the *Yarrow*), the *Teviot*, and the *Till* (within the borders of England), on the right bank,—the *Lyne*, the *Gala*, the *Lander*, and the *Adder*, on the left.

The *Forth* has a length of 60 miles from its source (on the skirts of Ben Lomond) to the neighbourhood of Alloa, where it unites with the

* On the banks of the Garry, a short distance above its junction with the Tumel, is the Pass of Killiecrankie, formed by the close approach of mountains on either hand, so as to narrow the valley to the immediate banks of the stream. A celebrated battle was fought here, in 1689.

Firth to which it gives its name; throughout its whole course it winds very considerably: its basin is about 645 square miles. The Forth is navigable for small vessels up to Stirling; its estuary, which is about 50 miles long, forms a broad and deep channel, capable of receiving the largest vessels.

The *Dee* has a length of 87 miles, and drains about 700 square miles of country. Its source is in the Cairngorm group of mountains, at a height of 4060 feet above the sea,—a greater elevation than that of any other river in the British Islands: the declivity of its bed is hence very considerable, and its course, especially in its upper portion, is exceedingly rapid.

The *Don*, about 50 miles in length, has a basin of 530 square miles: it is generally rather a slow river, though rising at an elevation of 1640 feet. Neither the *Dee* nor the *Don* are navigable.

The *Spey* has a length of 96 miles, and drains an area of 1190 square miles: its source, in a small pool called Loch Spey, is at an elevation of about 1200 feet above the sea. Unlike most rivers, the lower portion of its course is the most rapid: in the upper part of its valley, the river slumbers in dark mossy lakes. The *Spey* is the wildest and most capricious of all the large British rivers, forming numerous rapids and falls, and its variations as to quantity of water are very considerable. It is not navigable, but timber is sent down it in floats or rafts.

The *Clyde*, 98 miles in length, drains about 1580 square miles. Its source, 1400 feet above the sea, is in the central part of the high lands of southern Scotland, and the upper part of its course is closely adjacent to some of the smaller tributaries of the Tweed basin. In the neighbourhood of Lanark, the *Clyde* forms three considerable falls, by which it descends 230 feet within a distance of less than 4 miles. It becomes navigable at Glasgow, which is also the limit of the tide-water. The principal tributaries of the *Clyde* are the Douglas, the Avon, and the Cart, on the left bank,—the Medwin, the Calder, and the Kelvin, on the right.

The *Nith* has a length of 60 miles, and drains about 460 square miles. The *Dee* (45 miles) forms in its middle portion a long narrow lake, called Loch Ken, 10 miles in length by from one-half to three-quarters of a mile in breadth. The *Esk* has the lowest part of its course within the English border. The *Annan* (45 miles), the *Esk*, and the *Eden* (an English river), are seen to unite in the broad expanse of sand which, at low water, forms the head of the Solway Firth.

(60.) *Lakes*.—Lakes are very numerous in Scotland, especially in the middle and northern divisions of the country. They are mostly long and narrow bodies of water, occupying the deep hollows within the elevated mountain-valleys. Although called by the same appellation of *loch*, they are essentially different from the salt-water lochs of the western coast, which have been already described (Art. 69.)

The largest lake in southern Scotland is Loch Ken, already mentioned as forming part of the course of the *Dee* (of Kirkcudbright.) St. Mary's Loch, out of which flows the *Yarrow* (a tributary of the *Tweed*), is 3 mi

in length, lies at a considerable elevation, and is in some places 180 feet deep. The other lakes in this part of Scotland are chiefly in its south-western portion, and are all of small size.

The largest lake in Scotland, and also in Great Britain, is *Loch Lomond* (45 square miles), which is 24 miles in length, and 7 miles in its greatest breadth, and contains more than thirty islands. At its southern extremity the river Leven carries its waters into the Clyde.

To the east of Loch Lomond, and separated from it by the mass of Ben Lomond and the adjacent mountains, is Loch Katerin (or Katrine), 9 miles long and three-quarters broad, the water of which is carried off by the Teith, the most considerable tributary of the Forth. On the banks of Lake Katerin, and the smaller lakes of Achray and Venacher, which lie below it, is the beautiful scenery of the *Trossachs*, a tract generally regarded as surpassing in its varied combinations of mountain, lake, river, and wood, any other district in the British Islands.

Loch Awe, 23 miles long and $1\frac{1}{2}$ in average breadth, is united by the River Awe to Loch Etive—one of the salt-water estuaries of the western coast. It is the second in magnitude of the Scotch lakes, and is surrounded by lofty mountains, among which Ben Cruachan, on its N. side, is pre-eminent.

Loch Tay, through which the River Tay passes, is 14 miles long and between one and two in breadth: on its western side is the huge mountain-mass of Ben Lawers. *Loch Ercht*, 14 miles long,—*Loch Rannoch*, eight miles,—and *Loch Lydoch*, 10 miles, are all united to the basin of the Tay by the River Tummel, (Art. 79). *Loch Earn*, eight miles long, is also connected with the Tay by the River Earn, which issues from this body of water.

Loch Leven, within the peninsula of Fife, is the largest lake not belonging to the region of the Highlands. It is four miles long and three broad, and lies at an elevation of 363 feet: the River Leven carries its waters into the Firth of Forth. The ruins of Lochleven Castle are situated on one of four islands which lie within this lake.

Loch Ness, 22 miles long by about $1\frac{1}{2}$ broad, forms a portion of Glenmore (Art. 74): it is upwards of 800 feet deep in its central part. *Loch Oich*, in the same valley, is five miles, and *Loch Lochie*, nine miles, in length. In the high valley of Strath Erich, on the east side of Loch Ness, are the *Falls of Fyers*, 272 feet in height, considered one of the finest waterfalls in the British Islands, and rivalling the falls of the Clyde and the Tummel in beauty.

The largest lakes in the Northern Highlands are *Loch Shin*, 17 miles long and one broad, which discharges itself by the River Shin into the Dornoch Firth,—and *Loch Maree*, $12\frac{1}{2}$ miles long and 3 in its greatest breadth, which is connected by the River Ewe with the estuary of Loch Ewe, on the western coast. Loch Maree contains numerous small islands, and the high mountains by which it is surrounded are among the few present haunts of the eagle in Great Britain. There are also numerous others, similar in form to those already described.

(81.) *Minerals*.—*Coal* and *iron* are the most considerable of the mineral productions of Scotland, and are chiefly confined to the southern division of the country and the neighbouring peninsula of Fife.

The great coal district of Scotland extends across the island in a diagonal

direction,—from Fife Ness, at the eastern extremity of the county of that name, across the Firth of Forth and the course of the Clyde, to the coast of Ayrshire. Throughout this tract are a succession of detached coal-fields, the total extent of which has been estimated at nearly 1000 square miles. The richest portions are those in the peninsula of Fife;—in the immediate neighbourhood of Glasgow;—and to the s. and n. of Edinburgh. Coal is also found in a few other places, but in insignificant quantities.

Iron-stone of excellent quality abounds in many parts of the above district, and is very extensively worked, especially in the neighbourhood of Glasgow and the tract of country to the eastward and north-eastward of that city.

The only other mineral found in any quantity in Scotland is *lead*, of which some rich mines are worked in the tract of the Lowther Hills, on the borders of Lanark and Dumfries. This metal is also found in a few other places. A small quantity of silver is extracted from the lead.

Excellent building-stone, of various kinds—particularly sand-stone—occurs in Scotland, in the neighbourhood of Edinburgh, Glasgow, different parts of Perthshire, and elsewhere. Granite is abundant in Aberdeen, on the northern declivity of the Grampian Mountains, and forms the entire mass of the Cairngorm group. It occurs also extensively in the county of Kirkcudbright, and in the island of Arran.

Roofing-slates are quarried extensively at several places in the county of Argyre, particularly near Ballachulish, on the south side of Loch Leven.

Nearly all the northern and western parts of Scotland, including the group of the Shetland Islands and the greater number of the Hebrides, consist of rocks of granitic formation, composed chiefly of gneiss (a kind of stratified granite) and indurated slaty rocks, or schists. The southern and south-western tract of country, between the coal district and the shores of the Solway Firth, consists chiefly of clay-slates, like the higher region of the Cumbrian Mountain group and part of the Welsh Mountains.

Rocks of volcanic formation are abundant in the islands of Skye and Mull, the small islet of Staffa, and also in various parts of the coal district.

Mineral Springs.—Saline waters occur in the neighbourhood of Stirling and Dumblane; near Perth; and at Inverleithen (on the banks of the Tweed, below Peebles):—chalybeate waters at Hartfell, near Moffat; Vicar's Bridge, near Dollar, in Stirling; Bonnington, near Edinburgh; and near the village of Ballater, on the north bank of the Dee:—sulphureous waters at Moffat (in the county of Dumfries), and near the town of Dingwall, in Ross-shire. There are no warm springs in Scotland. At St. Catherine's, in the parish of Liberton, near Edinburgh, there is a spring which yields asphaltum in considerable quantities.

(82.) *Climate.*—The climate of Scotland resembles that of England in its general character, allowance being made for the diminution of the mean temperature of the year with the gradual advance to a higher latitude. Edinburgh (220 feet above the sea) has a mean annual temperature of $47\cdot1^{\circ}$, Aberdeen of $49\cdot1^{\circ}$, Wick of $46\cdot9^{\circ}$, Stromness (Orkney Islands) $46\cdot3^{\circ}$ Unst (the most northern of the Shetland group) of $44\cdot7^{\circ}$

In the parallel of the Shetland Islands the longest day is nearly 19 hours, and the shortest less than 6 hours. But, owing to the essentially maritime position of these islands and the northern coasts of the mainland, the extremes of heat and cold are so moderated as to cause a less amount of difference between their summer and winter temperatures than in any other part of the British Islands, excepting in the south-western extremity of Cornwall, at the opposite end of the island. The winter temperature of the Shetland Islands is the same as that experienced on the south coast of England, in the neighbourhood of the Isle of Wight, though there is a difference of 10° of latitude, or nearly 700 miles, between them.

The Hebrides have a more humid and variable climate than any other part of the British Islands.

The native vegetation and zoology of Scotland require no special description, and their general character has been already noticed (Art. 5.) Many of the fruits and other plants which belong to England do not come to perfection in Scotland, on account of the greater severity of the climate. Wood is generally much less abundant in Scotland than in England, though extensive forests of fir occur in some parts of the Highlands, especially in the county of Aberdeen.

The most noted of the breeds of domestic animals peculiar to Scotland are the Clydesdale horse; the Shetland pony; the cattle-breeds of Argyshire, the Hebrides, and some districts of southern Scotland, with Forfarshire, and Orkney and Shetland; and the Shetland sheep, remarkable for the fineness of its wool.

(83.) *Inhabitants*.—Scotland is a thinly-populated country. The number of its inhabitants, in 1841, was 2,620,000,—an average of 87 to the square mile. But while in the districts around Glasgow and Edinburgh the number of inhabitants is between 600 and 700 to the square mile, in the county of Argyle the proportion is only 30, in Ross and Cromarty 27, in Inverness 24, and in Sutherland only 14. The Highland counties,—that is, the north and west parts of the country—have all a very low average of population, owing to the mountainous nature of the surface and the small extent of cultivable land.

The people of Scotland form two distinct races,—the *Lowlanders*, who are a mixed people, but resemble in the main the great bulk of the inhabitants of England, and speak a language which is radically the same as the English,—and the *Highlanders*, who are of the Celtic race, and speak a totally different dialect. The Lowlanders form, however, the great majority of the people, and the Highlanders are now chiefly confined to the districts lying north and west of the Grampians. The English language is gradually extending itself over every part of the Highlands, and the Celtic dialect will probably ere long be wholly supplanted by it.

(84.) *Industrial occupations*.—Scotland is at present, in even a greater ratio than England, principally a manufacturing and commercial country. In 1841, the proportion of the total population directly engaged in trade and manufacture was 18·1 per cent., and of those engaged in agricultural pursuits, 8·8 per cent., generally mountainous character of the country

necessarily sets limits to the extension of cultivation, but the manufacturing and commercial resources of its southern portion—in the abundance of coal and iron, and the number and excellence of its harbours—are almost unbounded.

Agriculture.—Only about a fourth part of the surface of Scotland is estimated to be capable of cultivation, and of this nearly one-half is in grass. Agriculture is, however, nowhere better understood, or more skilfully practised, than in some portions of the Lowlands, particularly in the districts called the Lothians (embracing the counties of Haddington, Edinburgh, and Linlithgow, to the south of the Firth of Forth), and the adjacent county of Berwick. In the counties of Dumfries, Ayr, Renfrew, Lanark, and Fife,—and also in that part of Perth and Forfar which embraces the Carse of Gowrie (Art. 73),—as well as some parts of Aberdeen, Elgin, and Nairn,—are also many fertile tracts, in which the cultivation of the soil is extensively carried on.

Throughout Scotland the staple crop consists of oats, but wheat of fine quality is grown in many of the above districts; barley is also grown, and flax—though only to a very limited extent. Turnip husbandry is extensively pursued in the counties of Haddington and Berwick, and throughout the eastern counties a large quantity of potatoes is grown for the supply of the London market.

The dairy-farm districts are chiefly in the counties of Ayr, Renfrew, and Dumfries, the first-named of which is famous for the cheese made at Dunlop, near its northern border.

Fisheries.—The fisheries in Scotland constitute an important and valuable branch of industry. The salmon abounds in most of the larger rivers, especially in the Tay, the Tweed, Dea, Don, Findhorn, and Spey, and the produce of its fishery is very considerable. The herring-fishery is also pursued to a great extent, chiefly on the shores of Caithness and the Moray Firth, off the entrance of the Firth of Forth, and in Loch Fyne and other places on the west coast. Cod, ling, and haddock, are likewise extensively taken, and there is a great oyster-fishery in the Firth of Forth, from which many millions of oysters are exported annually.

(85.) *Manufactures.*—The *cotton* manufacture is the first in importance, though of comparatively recent introduction, and the printing of cottons is carried on to a greater proportionate extent in Scotland than in England. Its chief seats are Glasgow and Paisley, and their immediate neighbourhood, in the counties of Lanark and Renfrew; it is also pursued to a smaller extent in the counties of Ayr, Aberdeen, and Perth.

The ancient staple manufacture of Scotland was that of *linen*, which is still carried on to a considerable extent, chiefly along the eastern coasts,—at Dundee (Forfar) and its neighbourhood for the coarser articles, as sail-cloth, &c.—and at Dunfermline (Fife) and its vicinity for diapers, damasks, and the finer fabrics.

The *woollen* manufacture is not considerable, but is carried on in the counties of Stirling, Ayr, Roxburgh, Selkirk, Aberdeen, and elsewhere: woollen hose, blankets, and flannels are made at Hawick (Roxburgh), tartans at Stirling and Bannockburn, and carpets at the latter place and St. Ninian's (both in the county of Stirling). Kilmarnock (Ayr) is a no

seat of the manufacture of carpets, shawls, and other woollen goods. The manufacture of *silk* is pursued to a small extent at Paisley, Glasgow, and Edinburgh. The iron-works have been already spoken of (Art. 81):

The manufacture of soap (chiefly at Glasgow, Leith, Paisley, Aberdeen, Prestonpans, and Montrose) has long been a considerable branch of industry; and also the distillation of spirits from grain, which is pursued in almost every part of the country. Ale is brewed to a large extent, chiefly in Edinburgh and its vicinity, and at Alloa, in Clackmannanshire.

On the western coasts and islands of Scotland the manufacture of *kelp* (from the burning of sea-weed)—for use in glass-works, &c.,—was formerly pursued to a considerable extent, and formed the principal occupation of the inhabitants of those parts. But this branch of industry has been greatly checked by the extensive importation of barilla from the Mediterranean coasts of Spain.

Ship-building is largely carried on at Greenock and Port Glasgow. Steam-vessels are built at Glasgow, and at that city, as well as at other places on the Clyde, the fitting of steam-ships with their engines and machinery is more extensively pursued than at any other place in Great Britain. Besides those belonging to our own country, many of the finest steam-vessels owned by foreign nations have been supplied with their machinery from the banks of the Clyde.

(86.) *Commerce*.—The foreign commerce of Scotland resembles that of England (Art. 52): her imports consist of the raw materials required for manufacturing purposes, chiefly cotton,—and various articles of colonial produce, as tea, coffee, sugar, &c. The exports are principally manufactured goods, cotton and iron-works, machinery, coals, &c. Agricultural produce is extensively supplied to England, including large numbers of cattle.

Glasgow is the great seat of the foreign commerce of Scotland, and is inferior in the total amount of its trade only to London, Liverpool, and Bristol. The commercial ports next in order of importance are Leith, Greenock, Port Glasgow, Aberdeen, and Dundee. Montrose (Forfarshire), Grangemouth (at the entrance to the Forth and Clyde Canal, Stirlingshire), Perth, and Arbroath, have also a considerable amount of foreign as well as coasting trade.

The ports of Ayr, Troon, Irvine, and others on the coast of Ayrshire, export considerable quantities of coals, chiefly to Ireland and the Western Islands. The inhabitants of Peterhead are extensively engaged in the cod-fishery, and also the whale-fishery in the Northern seas.

Internal communication.—Excellent roads now extend through almost every part of the country, and cross even the most mountainous tracts of the Highlands.

Of *canals*, the two principal are, the *Forth and Clyde Canal*, which connects the entrance of those rivers, through the plain which we have described under that name (Art. 72), and the *Caledonian Canal*, through the narrow valley which divides Northern Scotland from the rest of the island (Art. 74). There are some others, but of comparatively little

importance, and the mountainous character of the greater part of the country prevents this method of internal communication from being so extensively adopted as in England.

Nearly all the principal cities in Scotland are now connected by *railways*. Two great trunk lines enter the country from England, one on either side of the island, and proceed respectively to Glasgow and Edinburgh: from these cities, other lines proceed northward, by Stirling, Perth, Dundee, and Forfar, and extend as far as Aberdeen, between which place and London there is now an uninterrupted railway communication of nearly 550 miles in length.

(87.) *National divisions*.—The 33 counties of Scotland have been already mentioned (Art. 70). The ecclesiastical division is into synods, presbyteries, and parishes, which latter are also in part civil divisions, and are 919 in number.

The counties are of extremely irregular shape, and unequal size: Inverness, the largest, contains 4054 square miles, Argyle 3189, Ross 2629, and Perth 2588; while Clackmannan, the smallest of these divisions, is only 48, and Kinross only 79, square miles in extent.

Of the islands, Bute, Arran, and the Great and Little Cumbray, form the county of Bute: and the Orkney and Shetland Islands constitute a separate county. In the Hebrides, the island of Lewis belongs to Ross,—Harris and the rest of the Long Island, with Skye, form part of the county of Inverness,—and Mull, Jura, Islay, and the smaller adjacent islands, belong to the shire of Argyle.

Many parts of Scotland are still familiarly known by the ancient names of particular districts, which were formerly of universal prevalence. The principal of these are included in the following Table:—

Angus, now Forfar.	Lennox, now Dumbarton.
Annapdale, part of Dumfries.	Liddesdale, part of Roxburgh.
Ardrross, " Ross.	Lochaber, " Inverness.
Athol, " Perth.	Lorn, " Argyle.
Badenoch, " Inverness.	Lothian (East), now Haddington.
Breadalbane, " Perth.	Do. (Mid), " Edinburgh.
Buchan, " Aberdeen.	Do. (West), " Linlithgow.
Cantire, " Argyle.	Mar, part of Aberdeen.
Carrick, the s. w. part of Ayr.	Mearns, now Kincardine.
Clydesdale, part of Lanark.	Menteith, part of Perth.
Cowal, " Argyle.	Merce, now Berwick.
Cunningham, the n. part of Ayr.	Moray, " Elgin.
Eakdale, part of Dumfries.	Nithsdale, part of Dumfries.
Ettrick Forest, now Selkirk.	Strathbogie, " Aberdeen.
Galloway, now Kirkcudbright and Wigton.	Strathearn, " Perth.
Gowrie, part of Perth and Forfar.	Strathmore, " do. and Forfar.
Knapdale, " Argyle.	Strathspey, " Elgin.
Kyle, the middle part of Ayr.	Teviotdale, " Roxburgh.
Lauderdale, part of Berwick.	Tweedale, now Peebles.

(88.) *Towns and principal places*.—The counties of Scotland are recapitulated in the following lists, with the principal towns in each, and their population according to the census of 1841. The names of county-towns are in italics.

The SOUTHERN LOWLANDS embrace thirteen counties, of which Berwick, Haddington, Edinburgh, and Linlithgow, are chiefly agricultural,—Rox-

burgh, Selkirk, Peebles, Dumfries, Kirkcudbright, and Wigton, chiefly pastoral,—and Ayr, Lanark, and Renfrew, principally manufacturing and trading counties.

Counties.	Towns.
Edinburgh . . .	<i>Edinburgh</i> , 128,000— <i>Leith</i> , 19,700— <i>Dalkeith</i> , 4800— <i>Newhaven</i> , 2100— <i>Granton</i> .
Linlithgow . . .	<i>Linlithgow</i> , 5900— <i>Bathgate</i> , 4000— <i>Borrowstoneness</i> , 2300— <i>Queensferry</i> , 700.
Haddington . . .	<i>Haddington</i> , 5400— <i>Dunbar</i> , 4800— <i>North Berwick</i> , 1700— <i>Prestonpans</i> , 1600.
Berwick	<i>Dunse</i> , 3200— <i>Coldstream</i> , 2800— <i>Eyemouth</i> , 1400— <i>Greenlaw</i> , 1300— <i>Earlston</i> , 1700.
Roxburgh	<i>Hawick</i> , 5700— <i>Kelso</i> , 5300— <i>Jedburgh</i> , 5100— <i>Mcrose</i> , 900.
Selkirk	<i>Selkirk</i> , 3400— <i>Galashiels</i> , 2100.
Peebles	<i>Peebles</i> , 2600— <i>Inverleithen</i> .
Dumfries	<i>Dumfries</i> , 11,400— <i>Annan</i> , 4400— <i>Moffat</i> , 1400.
Kirkcudbright . .	<i>Kirkcudbright</i> , 3500.
Wigton	<i>Stranraer</i> , 3400— <i>Wigton</i> , 2500— <i>Port Patrick</i> , 990— <i>Whithorn</i> .
Ayr	<i>Kilmarnock</i> , 20,000— <i>Ayr</i> , 17,300— <i>Irvine</i> , 7600— <i>Girvan</i> , 7400— <i>Salcoats</i> , 4200— <i>Ardrossan</i> , 4900— <i>Troon</i> , 1400.
Lanark	<i>Glasgow</i> , 274,000— <i>Airdrie</i> , 12,400— <i>Hamilton</i> , 8800— <i>Lanark</i> , 7600.
Renfrew	<i>Paisley</i> , 48,000— <i>Greenock</i> , 36,000— <i>Port Glasgow</i> , 6900— <i>Johnston</i> , 5800— <i>Renfrew</i> , 3000.

(89.) *Edinburgh*, the metropolis of Scotland, lies within about two miles of the southern shores of the Firth of Forth, in the direction of N. N. W. from London, and at a direct distance of 325 miles from that city, or 398 by railway. The ground upon which it stands is rugged and uneven, and the eminence called the Calton Hill, in the north-east part of the city, rises to the height of 355 feet: the rock upon which the castle is built, nearly in the centre of the town, is 434 feet above the sea, and the adjacent country rises to considerably greater elevations (Art. 72). The Old Town of Edinburgh embraces its southern and south-eastern portions, and consists of narrow and crowded streets, with houses of unusual height; the New Town, to the north and north-westward, consists of wide and open streets, with numerous squares, terraces, and crescents, and presents features of great architectural beauty. On this latter side, Edinburgh slopes towards a small stream called the Water of Leith, which washes its northern and western outskirts. The whole city is about 7 miles in circuit, but a large portion of the ground within these limits is unoccupied by houses.

Edinburgh is chiefly distinguished as a seat of learning: it possesses an University, which holds a distinguished rank as a medical school, as well as for the cultivation of general literature and science, besides numerous other literary and scientific institutions. Of its public libraries, that called the Advocates' Library contains upwards of 150,000 volumes. The Castle of Edinburgh, which occupies an area of 7 acres, and the ancient royal palace of Holyrood House, are its two most celebrated structures. This city is the seat of the supreme Courts of Law for Scotland.

Leith, situated on the shores of the Firth of Forth, at the mouth of the little rivulet called by its name, is the principal port of Edinburgh, with which city it is nearly united by continuous lines of building. It has a coasting and foreign trade, ranking second only to Glasgow in the

order of importance among the Scotch ports. Leith was until lately a mere dependent suburb of Edinburgh, but is now an independent borough.

Upon the southern shores of the Firth, on either side of Leith, are numerous small ports and fishing towns, several of which are much resorted to as summer watering-places by the people of Edinburgh. *Newhaven*, 1 mile west of Leith, and *Granton*, further to the westward, both share in the trade of that port.—*Queensferry*, 9 miles to the westward of Leith, at the narrowest part of the Firth, and *Borrowstoneness* (or *Bo'ness*), further to the west, are both places of some trade.—To the east of Leith are *Porto Bello*, *Musselburgh* (at the mouth of the Esk), *Prestonpans*, and *North Berwick*; the last-mentioned of which is at the entrance of the Firth and in the neighbourhood of the Bass Rock (Art. 78). *Prestonpans* was the scene of an engagement, in 1745, between the English forces and the troops of Prince Charles Edward.

Linkithgow, on the banks of a lake which communicates with the little stream of the Avon, possesses the ruins of a fine ancient palace.—*Bathgate*, 5 miles to the south, is a thriving town, with important markets for cattle and agricultural produce in general.—*Dalkeith*, 6 miles s.e. of Edinburgh (near the junction of the two branches of the Esk), has also considerable meal and grain markets.

Haddington, 17 miles east of Edinburgh, is situated on the stream of the Tyne, which flows through a highly fertile and cultivated district.—*Dunbar*, situated on the coast (midway between Edinburgh and Berwick-on-Tweed), is now chiefly important for its herring-fishery and its trade in corn: it has been the scene of many important events in Scottish history.—*Dunse*, the largest town in the county of Berwick, is a thriving and important place, in the midst of a rich agricultural tract of country.—*Coldstream* is a small town on the north bank of the Tweed, which here forms the boundary between England and Scotland.

Kelso, one of the principal towns in the border district, lies on the north bank of the Tweed, 22 miles above Berwick; it has considerable trade in corn. Nine miles higher up the river (in the s.w. corner of Berwickshire) is *Dryburgh Abbey*, the burial-place of Sir Walter Scott. At a further distance of 4 miles to the westward, on the south bank of the river, is the village of *Melrose*, famous for the ruins of its abbey, and 3 miles beyond is *Abbotsford*. *Melrose* is situated at the foot of the group of the Eildon Hills.—*Hawick*, 19 miles s.w. of Kelso (situated on the little river Slitrig, at its junction with the Teviot), has considerable manufactures of hosiery and other woollen goods.—*Jedburgh*, nearly midway between Kelso and Hawick, stands on the river Jed, an affluent of the Teviot.

Selkirk, on the Ettrick (one of the chief affluents of the Tweed), a short distance below the junction of the Yarrow, lies in the midst of a pastoral district; some woollen-mills have recently been erected in its vicinity.—The town of *Galaehiele*, on the banks of the Gala, near its junction with the Tweed, is an important seat of the woollen manufacture: the fine cloths known by the name of 'Tweeds' are chiefly made here; and besides the abundant supply of wool from the adjacent district, a considerable quantity is imported.—*Peebles* (22 miles south of Edinburgh) is a small town on the north bank of the Tweed, in the valley of upper Tweedale.—*Inverleithen* (6 miles to the eastward), near the mouth of the Leithen

Water, is a pleasant village, resorted to on account of its mineral springs.

Dumfries, on the east bank of the Nith, 9 miles above its entrance into the Solway Firth, is a thriving seat of trade, and constitutes a sort of capital for the southern parts of Scotland. It is a considerable market for the agricultural produce of the south-western counties, which is exported in large quantities to England. In one of its churchyards is the tomb of Robert Burns.—*Annan* (16 miles to the south-eastward) is a small sea-port at the mouth of the river of that name. The village of *Moffat*, 19 miles north-east of Dumfries, near the head of Annandale, derives much celebrity from its mineral waters, and is resorted to for their sake.

Kirkcudbright, near the mouth of the Dee, and *Wigton*, on the west side of Wigton Bay, are small towns, only of local importance.—*Stranraer*, at the head of Loch Ryan, has a good harbour and some trade.—*Port Patrick*, a small sea-port on the North Channel, derives importance from its proximity to the Irish coast (Art. 93).

Ayr, at the mouth of the river of that name, has some shipping trade, chiefly with Ireland; ship-building and fishing are also carried on, but the fishery is now not so extensive as formerly. Two miles to the south of Ayr, on the banks of the river Doon, is the cottage in which Robert Burns was born.

To the north and south of Ayr the coast has a semicircular sweep, enclosing a fine bay, upon the shores of which are several small fishing and sea-port towns.—*Girvan*, 21 miles south-west of Ayr, has some cotton manufactures and trade. To the north of Ayr are, in succession, *Troon*, *Irvine*, *Salisbury*, *Ardsrossan*, and *Largs*, the last two of which are much frequented as bathing-places. Irvine is a considerable sea-port, at the mouth of the river Irvine. The ports of Ayr, Troon, and Irvine are within the limits of the coal district, and are largely engaged in the coal trade (Art. 86).—*Kilmarnock*, 12 miles to the north-eastward of Ayr (near the north bank of the river Irvine), is a considerable manufacturing town (Art. 85).

Glasgow, on the river Clyde, 43 miles west by south of Edinburgh, and 400 miles (by railway) from London, is the great seat of Scotch manufactures and commerce. Its former harbour was Port Glasgow, 19 miles lower down the river, which is itself a thriving town, with a good harbour and extensive docks. The navigation of the Clyde, however, has been so much improved that vessels of 1000 tons burden now ascend to Glasgow itself. The larger part of the city lies on the north bank of the Clyde, but there is an extensive suburb to the south of the river, which is crossed by five bridges. The banks of the Clyde are lined by fine quays, and Glasgow contains many magnificent public edifices. But the older parts of the town are very closely built, and consist chiefly of narrow dirty lanes and courts. Glasgow possesses an University, of high repute as a seat of learning, and contains many other institutions for the cultivation of science. About 2 miles to the southward of Glasgow is the field of Langside, upon which the cause of Mary Queen of Scots was finally lost, A. D. 1568; and 8 miles to the south-eastward, near the town of Hamilton, is Bothwell Bridge, the scene of a sanguinary skirmish between the Covenanters and the Royal troops, in 1679.

Greenock, on the south bank of the Clyde (3 miles below Port Glasgow

and 22 miles to the north-westward of Glasgow), is a large and flourishing sea-port. It possesses a good harbour and docks, and has considerable maritime commerce (Arts. 85, 86). Sugar-refining is also carried on here to a large extent. About 2 miles further to the westward is the sea-bathing village of *Gowrock*.

Paisley, 7 miles west of Glasgow (on the river Cart, an affluent of the Clyde), is noted for its manufacture of silks and cottons, especially shawls. It is, next to Glasgow, the most important manufacturing town on the western side of Scotland, and, besides factories for the pursuit of every branch of the cotton trade, has distilleries, copperas-works, bleach-fields, coal-pits, &c. Vessels of 60 tons can come up to the town, partly by the river, and partly by a canal from the Clyde. — *Johnston*, 3 miles west by south of Paisley (on the Black Cart, a tributary of the Cart), has numerous cotton-mills, beside brass and iron founderies, and machine manufactories. — *Renfrew* and *Lanark*, the county-towns of their respective shires, are unimportant places. At New Lanark, near the latter, are some considerable cotton-mills. — *Airdrie*, 11 miles to the eastward of Glasgow, is situated in the heart of the coal district, and is a thriving town, surrounded by collieries and iron-works.

The NORTHERN LOWLANDS embrace part of Stirling, a small part of Perthshire, the counties of Clackmannan, Kinross, Fife, Forfar, Kincardine, — and parts of Aberdeen, Banff, Elgin, Nairn, and Caithness. The linen manufacture is carried on in some of these, but the greater part are either agricultural or pastoral.

Counties.	Towns.
Stirling	<i>Stirling</i> , 9000 — <i>Falkirk</i> , 8200 — <i>Grangemouth</i> , 1400 — <i>St. Ninian's</i> , 1300 — <i>Bannockburn</i> , 3300.
Clackmannan . .	<i>Alloa</i> , 5400 — <i>Clackmannan</i> , 1100 — <i>Dollar</i> , 1100.
Kinross	<i>Kinross</i> , 3000.
Fife	<i>Dunfermline</i> , 20,000 — <i>Kirkcaldy</i> , 5200 — <i>St. Andrew's</i> , 4400 — <i>Cupar</i> , 3500 — <i>Falkland</i> , 2800.
Perth	<i>Perth</i> , 19,000 — <i>Dumblane</i> , 1900 — <i>Doune</i> , 1500 — <i>Dunkeld</i> , 1000 — <i>Crief</i> , 3600.
Forfar	<i>Dundee</i> , 62,800 — <i>Montrose</i> , 15,000 — <i>Forfar</i> , 9600 — <i>Arbroath</i> , 7200 — <i>Brechin</i> , 3900 — <i>Cupar-Angus</i> , 1800.
Kincardine . . .	<i>Stonehaven</i> , 3000 — <i>Bervie</i> , 1300 — <i>Finnan</i> .
Aberdeen	<i>Aberdeen</i> , 67,000 — <i>Peterhead</i> , 7600 — <i>Fraserburgh</i> , 3600 — <i>Inverury</i> , 2000.
Banff	<i>Banff</i> , 4000 — <i>Portsoy</i> , 1500.
Elgin	<i>Elgin</i> , 6000 — <i>Forres</i> , 3700 — <i>Burgh-head</i> , 800.
Nairn	<i>Nairn</i> , 3400.
Caithness	<i>Wick</i> , 10,400 — <i>Thurso</i> , 2500.

(90.) The eastern part of Stirling is within the limits of the coal district, and contains several manufacturing towns and villages; the middle portion of the county consists of elevated moorland, and its most western extremity is a rugged and mountainous tract. The town of *Stirling* is situated on the south bank of the Forth, 35 miles west by north of Edinburgh. It is a place of great antiquity, and contains a fine castle, the former residence of the Kings of Scotland, — built upon a rock

Both the cotton and woollen manufactures are carried on here, especially the latter. — *St. Ninian's* and *Bannockburn*, both populous villages to the southward of Stirling, have also extensive manufactures of woollen goods (Art. 85). The latter of these derives its name from the small stream, or *burn*, on which it is situated, and upon the banks of which Robert Bruce gained his great victory over the English, in 1314. — *Falkirk*, 12 miles south-east of Stirling, is celebrated for its extensive cattle-markets, and also for two battles fought in its neighbourhood,—one, a victory gained by the troops of Edward I. over the Scots in 1298,—the other, an engagement between the Highlanders and the Royal forces (A.D. 1746), in which the latter were defeated. — *Grangemouth* is a thriving port near the mouth of the river Carron, and at the eastern entrance of the Forth and Clyde Canal.

The line of the Forth and Clyde Canal (and also of a portion of the Edinburgh and Glasgow Railway) nearly coincides with that of an ancient rampart erected across this portion of the island by the Romans. This wall or intrenchment, (a considerable portion of which may still be traced, and which is now known by the name of *Grimes Dyke*,) was originally constructed by Agricola, A.D. 80, and, sixty years later, was restored and strengthened during the reign of the Emperor Antoninus. It extended from the shores of the Firth of Forth, a little below Bo'ness, to the banks of the Clyde, 4 miles above Dumbarton, a length of 36 miles.

Alloa, the principal place in the county of Clackmannan, is an ancient town near the north bank of the Forth; it has considerable trade in the export of coals, and is celebrated for its ale, large quantities of which are exported; the trade in malt is considerable, and there are iron-works and other factories in its vicinity. — *Kinross* is a small town on the west side of Loch Leven, the castle of which name, situated on an island in the lake, was one of the many prison-houses of Mary Queen of Scots, and the scene of her romantic escape.

The county of Fife, which embraces the greater part of the peninsula lying between the Firths of Forth and Tay, has numerous small sea-port towns, chiefly situated along its southern border. Most of these are engaged in the herring-fishery, and carry on some coasting trade; the most considerable is *Kirkcaldy* (9 miles north of Leith), which has extensive grain-markets. To the south-west of Kirkcaldy are *Burntisland* and *Inverkeithing*, the former of which is the chief point of passage across the Firth to and from Granton, on its opposite side, and is also resorted to by the people of Edinburgh as a summer watering-place. — *Dunfermline*, in the western part of Fifeshire (15 miles north-west of Edinburgh), is an ancient town of great historical celebrity; within its abbey-church, the older part of which is in ruins, are the remains of Robert Bruce. Dunfermline is the chief seat of the linen manufacture (Art. 85), and the coal-mines in its neighbourhood are extensively worked. — *Cupar* is a small town on the banks of the river Eden: *Falkland*, 10 miles to the south-west, is an ancient place, formerly the frequent residence of the Scottish monarchs. — *St. Andrew's*, upon the eastern coast of the county, is a venerable city, the seat of the oldest of the Scotch Universities. It possesses the ruins of a magnificent cathedral, and also of an ancient castle.

The city of *Perth*, in the south-eastern part of the extensive county of Fife, is beautifully situated on the west bank of the Tay, a few miles

above the mouth of the river: it is a town of great antiquity, and has been the scene of many historical events. Perth is mostly well built, and contains many handsome streets and public erections. The manufacture of cotton goods, leather, and gloves, is pursued to some extent, and there is considerable import trade. One mile to the north, on the opposite bank of the river, is *Scone*, in the ancient abbey of which was a stone which served as the coronation-seat of the Scotch monarchs: it was removed to Westminster Abbey by Edward I., where it is placed below the chair upon which the Sovereign is seated during the ceremony of receiving the crown. The village of *Abernethy*, near the mouth of the Earn, 7 miles s.e. of Perth, was once the capital of an ancient Pictish kingdom.—*Crieff*, on the north bank of the Earn, 20 miles w. of Perth, has some trade in the weaving of cottons and linens.—The small town of *Dumblane* (24 miles s. w. of Perth, and 5 miles n. of Stirling,) contains a fine ancient cathedral; in the neighbourhood of this place, about 2 miles to the eastward, was fought the battle of Sheriffmuir, A. D. 1715.—At *Doune*, on the river Teith, 4 miles w. of Dumblane, are extensive cotton-works: about 7 miles further to the n. w. is the village of *Callender*, situated at the foot of the mountains which here form the eastern outskirts of the Highlands, and, in its neighbourhood, the district of the Trossachs, celebrated for its natural beauties and its poetical associations (Art. 80.)

Dundee, situated on the north shore of the Firth of Tay (18 miles to the eastward of Perth), is an important manufacturing and commercial town. (Art. 85), and contains excellent docks for the accommodation of shipping: linen and hempen goods are extensively made in the town and its neighbourhood, and form the staple articles of its trade. It is, next to Leith and Aberdeen, the principal sea-port on the east coast of Scotland.—*Arbroath*, or *Aberbrothock*, upon the coast, 18 miles to the north-eastward of Dundee, and *Montrose* (at the mouth of the South Esk river), 12 miles further to the north, are both flourishing sea-ports (Art. 86).—*Brechin*, 8 miles n. w. of Montrose, is an ancient episcopal city, on the banks of the South Esk; it contains an old cathedral and a castle.—The town of *Forfar* lies in the middle of the county, in the centre of the extensive valley of Strathmore: it has considerable trade in the weaving of coarse linen cloths, and there are valuable quarries of sandstone in its neighbourhood.—*Cupar-Angus* (so called to distinguish it from the county-town of Fife), on the river Isla, an affluent of the Tay, has also some share in the making of linen fabrics, which is pursued throughout all the towns and villages in the county of Forfar. *Stonehaven* and *Bervie* are small sea-ports on the coast of Kincardine.

The city of *Aberdeen*, the third place in Scotland in point of size and population, is situated between the mouths of the rivers Dee and Don: the northern part of the town (properly *Aberdon*), adjacent to the banks of the Don, is distinguished as Old Aberdeen. Aberdeen has of late years become a place of great foreign and coasting trade, and possesses an extensive dock, with fine piers and quays. It has also considerable manufactures of cotton, linen, and woollen fabrics, and there are large iron-works and ship-building yards. The valuable granite-quarries in ^{the} vicinity have been extensively used in the public buildings of the city supply abundant materials for export. Aberdeen is the seat

University, which embraces two colleges,—King's College, in Old Aberdeen, and Marischal College, in New Aberdeen, both of which are flourishing institutions.—*Peterhead*, on the coast, 28 miles to the N. E. of Aberdeen, and *Fraserburgh* (near the promontory of Kinnairds Head), 16 miles further to the northward, are both places of considerable trade (Art. 86): *Peterhead* has also extensive manufactures of thread, woollen-cloth, and cotton goods.—*Inverury* is a small and decayed inland town, at the junction of the river Ury with the Don.

In the upper part of the valley of the Dee, 42 miles to the westward of Aberdeen, and within the region of the Highlands, is the village of Ballater, resorted to both on account of the mineral springs in its neighbourhood and the romantic beauty of the wild scenery among which it is placed. About 7 miles higher up the river, upon its south bank, is Balmoral Castle, the Highland residence of her Majesty Queen Victoria. The valley of the Dee is bounded on the S. by the main range of the Grampian Mountains (Art. 73).

The town of *Banff* (18 miles to the west of the promontory of Kinnairds Head, and 39 miles N. W. of Aberdeen,) is situated at the mouth of the river Doveran: both the herring and salmon fisheries are pursued here to a considerable extent, and their produce sent to London and other markets. Upon the coast, further to the westward, are *Portsoy* (7 miles west of Banff), *Garmouth* (at the mouth of the Spey), and *Burgh-head* (adjacent to a promontory of the same name); all of these are small fishing and sea-port towns.—*Elgin*, a small town on the right bank of the river Lossie, possesses the remains of a fine Gothic cathedral. *Forres*, an ancient place on the road thence to Inverness, lies at a short distance from the mouth of the river Findhorn. Ten miles further to the west is *Nairn*, at the mouth of the river Nairn, and thence to Inverness is an additional distance of 14 miles, in a S. W. direction.

The town of *Wick*, upon the east coast of Caithness, is the principal seat of the herring fishery in the north of Scotland, and is a thriving sea-port: upon the opposite side of the stream at the mouth of which it is situated is Pulteney Town, which forms its suburb.—*Thurso*, upon the north shore of the island, has a good harbour and some trade. At the north-eastern extremity of the county, to the west of Duncansby Head, is a spot known as John o'Groat's House, though no edifice of any kind now exists there.

THE SOUTHERN HIGHLANDS embrace the counties of Bute, Dumbarton Argyre, part of Stirling, and the greater part of Perth,—all chiefly pastoral: on the coast, the herring-fishery is pursued.

Counties.	Towns.
Bute	<i>Rothsay</i> , 7000— <i>Kilbride</i> (Arran I.), 2300.
Dumbarton	<i>Kirkintulloch</i> , 8800— <i>Dumbarton</i> , 3800— <i>Helensburgh</i> .
Argyle	<i>Campbeltown</i> , 6800— <i>Inverary</i> , 2800— <i>Oban</i> , 1500— <i>Dunoon</i> — <i>Tobermory</i> (Isle of Mull), 1400.

(91.) The town of *Rothsay*, upon the eastern coast of the isle of Bute, much resorted to as a summer watering-place, and is distinguished for

the mildness and salubrity of its climate.—*Lamlash*, or *Kilbride*, on the east coast of Arran, is only an insignificant village.

Dumbarton, 13 miles N. W. of Glasgow, is an ancient town at the mouth of the small river Leven (the outlet of Loch Lomond), at the place where it joins the Clyde. Its castle, built upon a lofty rock which rises to the height of 560 feet, and formerly a place of great strength and importance, forms a conspicuous object in the scenery of the Clyde.—*Kirkintulloch*, 7 miles to the N. E. of Glasgow, is situated in a detached part of the county, enclosed by the shires of Stirling and Lanark. Its inhabitants are chiefly engaged in weaving, in connection with the extensive manufactures of Glasgow.

Inverary, the county-town of Argyle, is a small place at the mouth of the little river Ary, near the head of Loch Fyne, the herring-fishery pursued in which estuary forms its staple trade.—*Campbeltown*, at the head of a small bay on the S. E. coast of the peninsula of Cantire, is a fishing town, which possesses some trade, exporting whiskey and herrings, with highland cattle and sheep.—*Dunoon* (Argyle) and *Helensburgh* (Dumbarton) are both sea-bathing villages,—the former on the west shore of the Firth of Clyde, and the latter at the entrance of the Gare Loch, an offset from the northern side of the same estuary.—*Oban*, a thriving village on the western coast, at the head of a fine bay formed by the broader part of Loch Linnhe, has some coasting trade, and has of late years become a place of great resort to tourists on their way to the northern parts of the country by the route of the Caledonian Canal.—In the northern part of Argyleshire, on the south side of Loch Leven, is the wild pastoral valley of *Glencoe*, the scene of the infamous massacre of the Macdonalds, in 1692. It is watered by the little stream of the Cona, which flows into Loch Leven.

The NORTHERN HIGHLANDS comprehend the counties of Inverness, Ross, Cromarty, and Sutherland, with parts of Aberdeen, Banff, Elgin, Nairn, and Caithness.

Countries.	Towns.
Inverness	<i>Inverness</i> , 15,000—Portree (Isle of Skye), 500.
Cromarty	<i>Cromarty</i> , 2600.
Ross	<i>Tain</i> , 3000—Dingwall, 2100—Invergordon, 1000—Stornoway (Isle of Lewis), 1300.
Sutherland	<i>Dornoch</i> , 2700.
Orkney and } Shetland }	{ <i>Lerwick</i> (Shetland Islands), 2700— <i>Kirkwall</i> , (Orkney Islands), 2300.

(92.) *Inverness*, at the mouth of the river Ness and on the shores of the Beauley Loch, is regarded as the capital of the Highlands. The northern entrance to the Caledonian Canal is at a short distance to the west of this town. Inverness is a well-built and thriving place, and possesses considerable local trade, serving as the port for a large inland district: town of great antiquity, and has been the scene of many ir

occurrences in Scottish history. In the neighbourhood of Inverness (about 5 miles to the s.e.) is Culloden Moor, memorable for the battle fought in 1746, by which the hopes of the Stuart family were finally extinguished.—*Portree* is a small fishing town on the east coast of the Isle of Skye.

Cromarty, a small sea-port town, is situated near the entrance of the fine basin of Cromarty Firth, which is here narrowed by two bold headlands called the Suters of Cromarty, but afterwards expands into a capacious estuary, forming a magnificent natural harbour. The county of Cromarty consists of several detached portions, the largest of which lies on the western side of the island.—At the head of Cromarty Firth is *Dingwall*, a small town on the banks of the river Conon.—*Tain*, on the south shore of Dornoch Firth, and *Dornoch*, upon the opposite side of the same estuary, are both small fishing towns; the latter is a decayed royal burgh, and contains part of an ancient cathedral.—The peninsula between Loch Beauley and Cromarty Firth is called the Black Isle, and that between the Firths of Cromarty and Dornoch is known by the general name of Easter Ross; portions of both of these districts are well cultivated, and belong to the tract described as the Plain of Cromarty (Art. 74).—*Stornoway*, at the head of Loch Stornoway, upon the east side of the island of Lewis, is a small but thriving sea-port.

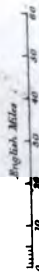
The natural features of Orkney and Shetland have been described in Art. 78.—*Kirkwall*, the largest town in Orkney, lies at the head of a small bay on the north side of the island of Pomona: it is a place of considerable antiquity, and possesses a large Gothic cathedral.—*Stromness*, on the south coast of the same island, has an excellent harbour.—*St. Margaret's Hope*, on the north side of the island of South Ronaldsha, is a small sea-port.—*Lerwick*, on the east coast of Mainland, in the Shetland group, is a small town with a good harbour, and is the most northerly port in the British Islands: it forms the usual rendezvous for vessels engaged in the northern whale-fishery. The fisheries furnish the chief occupation to the inhabitants of both these groups: straw-plaiting is also carried on, and some sheep are reared.



MAP OF

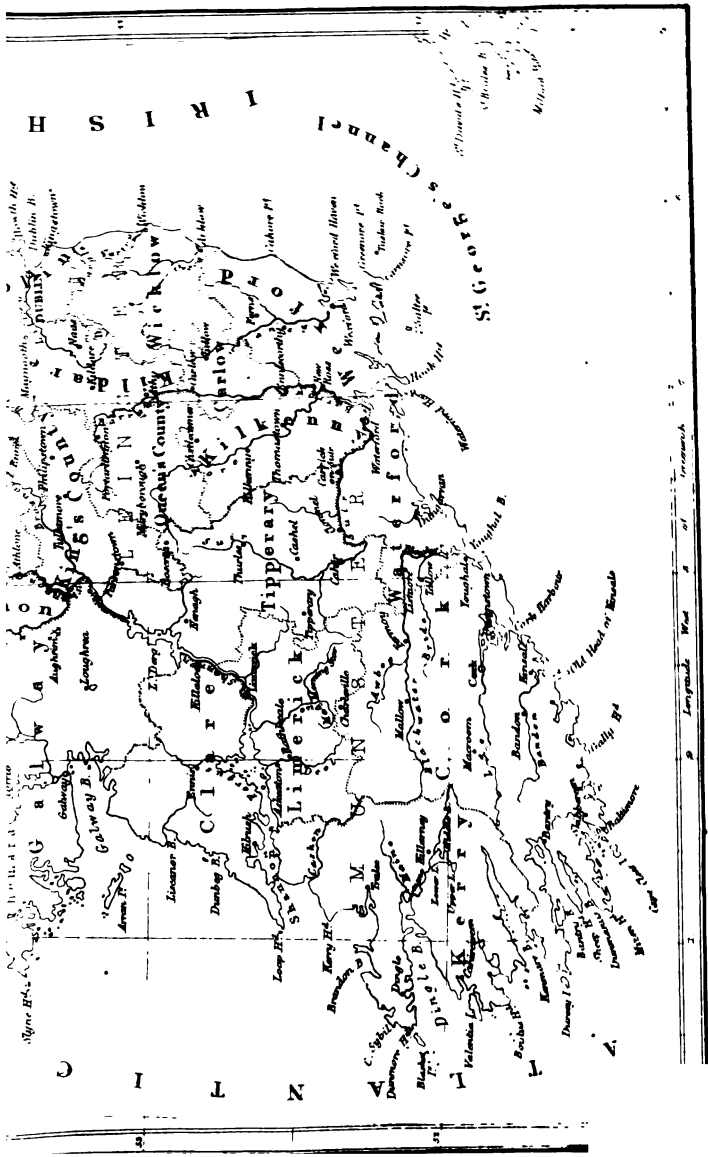
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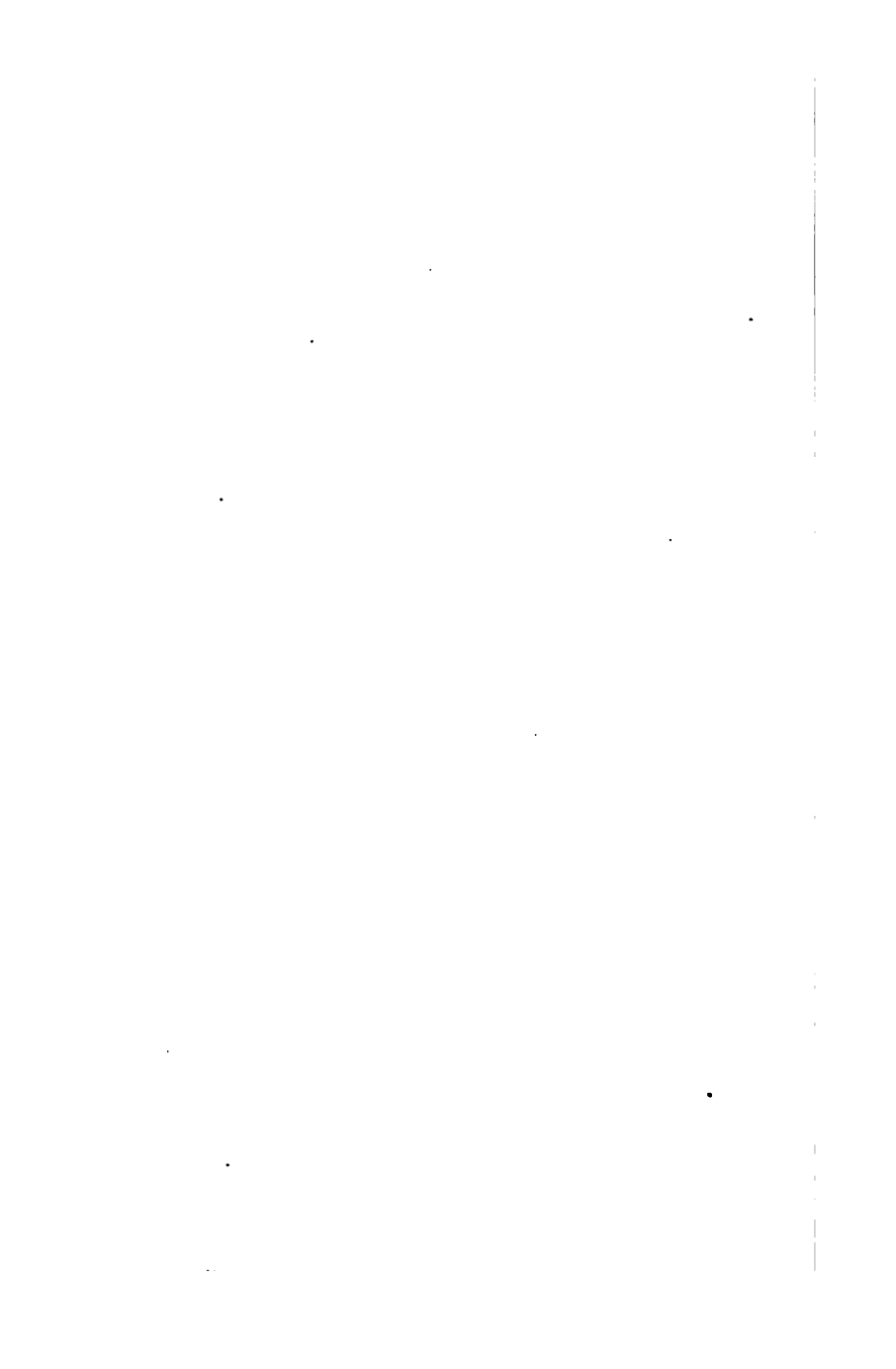
showing the
Provinces, Counties, and principal Towns.



Boundaries of Provinces shown by
dotted lines.
Counties
shown by
solid lines.







SECTION III.

I R E L A N D .

(93). *Extent and Boundaries.*—Ireland is bounded on the north, west, and south, by the Atlantic Ocean, and on the east by the Irish Sea, which communicates with the ocean by the North Channel, and St. George's Channel. The nearest approach made by Ireland to the shores of Britain is at its north-eastern extremity, where the promontory called Fair Head is only 13 miles distant from the Mull of Cantire in Scotland; this is the narrowest portion of the North Channel: further south, between Donaghadee (in the county of Down) and Port Patrick, on the coast of Wigton, is a distance of only 22 miles. St. David's Head, on the coast of Wales, is 53 miles distant from Carnsore Point, at the s. e. extremity of Ireland,—the intervening sea forming the narrowest part of St. George's Channel.

The most northern point of Ireland is Malin Head, lat. $55^{\circ} 22'$; the most southern, Mizzen Head, is in lat. $51^{\circ} 26'$. A straight line drawn between these two points measures 290 miles: the mean length of the island, however, from Malin Head to the south coast of Waterford, is about 220 miles. The most eastern point, on the coast of Down, is in $5^{\circ} 26'$ w. longitude;—the most western, Dunmore Head, in $10^{\circ} 29'$.

The greatest breadth of Ireland, in the direction of east and west, is 175 miles, and the least (between the heads of Donegal Bay and Belfast Lough) less than 90 miles. Between the opposite bays of Dublin and Galway, the distance is 110 miles. The mean breadth of the island is about 140 miles.

The mean length and breadth of Ireland bear a less unequal proportion to one another than is the case either with England or Scotland, and the island, regarded as a whole, has a squarer and less irregular form. Its general shape, disregarding the extreme projections of the land, resembles that of an oblique parallelogram, or *rhomboid*, the sides of which are formed by lines drawn between the promontories of Fair Head on the north-east, Erris Head on the north-west, Mizzen Head in the south-west, and Carnsore Point in the south-east. The figure formed by straight lines connecting these points gives a correct general outline of the country and the direction of its coasts.

The superficial extent of Ireland is 32,513 square miles, and the entire length of its coast line, measured along the numerous estuaries of its western and northern shores, is estimated to be 2346 miles.

(94). *Capes.*—The principal headlands, commencing with the most northern point, and proceeding in a westerly direction round the island—

are—*Malin Head*; *Horn Head* (921 feet high, on the meridian of 8°); *Rossan Point* (on the north side of Donegal Bay); *Erris Head* (long. 10°); *Achil Head* (the west point of Achil Island); *Styne Head* (county of Galway); *Loop Head*, 248 feet (on the north side of the estuary of the Shannon); *Kerry Head* (south side of do.); *Dunmore Head* (the most western point of land, on the north side of Dingle Bay); *Mizen Head* (the most southern point); *Cape Clear* (on the island of that name, to the south of the county of Cork); *Carnsore Point* (at the south-east extremity of Ireland); *Cahore Point* (Wicklow); *Howth Head* (north side of Dublin Bay, 549 feet); *Benmore*, or *Fair Head* (626 feet, the north-east point of Antrim); *Bengore Head* (400 feet, the north point of Antrim), and adjacent to it on the west, the *Giant's Causeway*, a basaltic promontory which projects into the sea for upwards of 1000 feet, and consists of huge piles of prismatic columns, arranged side by side with the most perfect regularity.

(95.) *Coasts*.—The north, north-west, south-west, and south shores of Ireland are generally high and rocky, and consist in many parts of rugged and precipitous cliffs, hollowed into various forms by the constant action of the Atlantic waves.

The eastern coasts are generally low and flat, and on this side of the island the sea in the immediate vicinity of the shore is much obstructed by sunken rocks, bars, and sand-banks. These are especially numerous on the north-east coasts, off the shores of Down and Antrim, and along the coast to the south of Dublin.

Estuaries, Bays, &c.—The principal inlets on the east coast are—Dublin Bay, Dundalk Bay, Dundrum Bay, Strangford Lough, and Belfast Lough. On the north coast are Lough Foyle and Lough Swilly.

On the west side of the island are—Donegal Bay, Clew Bay, Galway Bay, the mouth of the Shannon, Dingle Bay, Kenmare Bay, and Bantry Bay.

On the south coast, the most considerable inlet is that which forms Cork Harbour.

The west and south-west coasts are more indented and irregular in shape than any other part of the island. The numerous inlets form several peninsulas, of which the most remarkable is that called the Mullet (on the north-west coast of Mayo), which is only connected with the mainland by an isthmus of less than half a mile in breadth.

The sea on the western coasts both of Ireland and Scotland is generally deep, and at a distance of about 60 miles from the Irish coast sinks suddenly from 100 to upwards of 200 fathoms. Here the proper bed of the ocean may be said to commence, the whole archipelago of the British islands being based upon a submarine bank.

(96.) Ireland is divided into four provinces, Ulster, Leinster, Munster, and Connaught; and into thirty-two counties, of which Ulster contains nine, Leinster twelve, Connaught five, and Munster six. Ulster occupies the north and north-east part of the island, Leinster the east and south-east, Connaught the west and north-west, and Munster the south-west, portions. The names of the counties are given in subsequent pages (rts. 110–114).

(97.) *Natural features of surface.*—Ireland is generally level in the interior; its mountains are mostly confined to the immediate neighbourhood of the coasts. Between Dublin Bay on the east, and Galway Bay on the west, a great plain stretches entirely across the island: the highest parts of this central plain are not more than 320 feet above the level of the sea. It extends northward to the shores of Lough Neagh, in the province of Ulster, and southward nearly to the borders of Waterford, in the province of Munster: its southern half, however, is diversified by hills of considerable elevation.

The mountains of Ireland do not form continuous chains, but constitute detached groups and highland masses, which at different parts of the coast intervene between the interior plain and the sea. They may be arranged into six distinct groups or systems, namely, the Mountains of Wicklow,—the Mourne Mountains (in the county of Down),—and the Mountains of Antrim,—on the east coast of the island;—the Mountains of Donegal, in the north-west;—the Mountains of Connemara, on the west coast, between Donegal and Galway Bays;—and the Mountains of Kerry, in the south-west.

The *Mountains of Wicklow* cover an extensive tract, which measures nearly 60 miles from north to south, and about 30 miles from east to west. Their highest summit, Lugnaquilla (in the centre of the mountain region), is 3039 feet above the sea, and is the third in elevation of the Irish mountains. Some other summits in the group exceed 2000 feet; the Sugar Loaf, a well-known mountain, is 1651 feet. This mountain region contains numerous small lakes and waterfalls, and is highly distinguished for the variety and beauty of its natural scenery.

The *Mourne Mountains* occupy a projecting portion of the coast, intermediate between Dundalk and Dundrum Bays, and rise in elevated masses from the immediate neighbourhood of the shore. Their highest summit, Slieve-donard, is 2796 feet above the sea.

The *Mountains of Antrim* form a kind of plateau which intervenes between Lough Neagh and the shores of the North Channel, and the highest portions of which are on its eastern side, immediately adjacent to the coast. The mountain called Divis, to the west of Belfast, is 1568 feet high; further northward, some summits are from 1700 feet to 1800 feet in elevation. This mountain tract terminates on the north-east in the high promontory of Fair Head.

The *Mountains of Donegal* form a high mountain-mass, intersected by parallel valleys which extend in a general direction of north-east and south-west. They contain several summits which exceed 2000 feet in height, the loftiest of which is Errigal (lat. $55^{\circ} 3'$, long. $8^{\circ} 5'$), 2462 feet. The cliffs which line the coast adjacent to Rossan Point, and which form the western termination of a portion of this mountain tract, are 750 feet in height: the mountain called Slieve League, to the south-

of the same point, rises precipitously close to the shore, and is 1964 feet high.

Between the Mountains of Donegal and the mountain region of Antrim some high ranges extend (to the south of Lough Foyle), in an east and west direction, through the county of Londonderry. In this tract, the mountain called Sawell (lat. $54^{\circ} 49'$, long. $7^{\circ} 2'$) is 2236 feet in height.

The mountain tract which extends along the western shores of Mayo and Galway, between Donegal and Galway Bays, is divided into two parts by the broad inlet of Clew Bay (lat. $53^{\circ} 50'$): to the north of Clew Bay are the Nephin Beg mountains and the high summit of Nephin,—to the south, the *Mountains of Connemara*, which embrace a number of detached groups and isolated eminences, divided by deep and narrow valleys. In the range of the Nephin Beg mountains the highest summit is 2368 feet; the mountain called Nephin, further to the eastward, is 2639 feet high. The cliffs on the north coast of Achil Island, which is only divided from this part of the mainland by the narrow channel of Achil Sound, are from 900 feet to 1800 feet in elevation. In the Mountains of Connemara, Mweelrea, adjacent to the west coast, is 2680 feet in height, and some others upwards of 2000 feet.

The *Mountains of Kerry* form several parallel ranges which extend (in a general east and west direction) through the county of that name, and into the adjacent county of Cork. Between these ranges the sea penetrates far within the land, and forms the numerous long and narrow estuaries which distinguish the south-west portion of Ireland. The highest summit among the mountains of Kerry, and also the highest in the island, is the mountain called Carrantuohill, in the group of Macgillcuddy's Reeks (on the west side of the Lakes of Killarney), which is 3404 feet above the sea. Mangerton, on the south-east side of the same lakes, is 2754 feet. Mount Brandon, in the peninsula which intervenes between Dingle Bay and the estuary of the Shannon, is 3120 feet, and is the second in height among the mountains of Ireland.

Besides the mountain systems above described are some other ranges of less extent, as the Slieve Bloom Mountains (on the borders of King's County and Queen's County), 1691 feet,—the Silver Mine Mountains (in the north-west part of Tipperary), 2265 feet,—the Galty Mountains (on the borders of Tipperary and Limerick), 3008 feet,—and the Knockmeiledown Mountains (on the borders of Tipperary and Waterford), 2598 feet. The Galty and Knockmeiledown Mountains, with other ranges in the south of Ireland, form prolongations of the mountains of Kerry, and have the same general parallelism of direction from east to west.

A large portion of the surface of Ireland consists of bog-land, which prevails most extensively in that part of the central plain which lies between Dublin and Galway Bays, and among the mountain-tracts of the western coast. Bogs occur also in other parts of the island, among the mountains of Wicklow, and those of the north-eastern coast. The bogs of Ireland bear no analogy to the fen districts of England; they lie in all cases at some elevation above the level of the sea, varying in height from 100 to 2000 feet, and are hence readily susceptible of drainage.

The total extent of bog-land is estimated to cover about 12,500 square miles, or nearly two-fifths of the whole surface of the island: the larger portion of this is flat red bog, capable of being reclaimed for cultivation;

the remainder consists of mountain-bog, mostly convertible into pasture land. The bogs are distinguished, according to the substance of which they are composed, into red or fibrous, and black or compact. The red bogs, which occur most extensively in the region of the central plain, furnish abundance of peat, which forms the fuel most generally used in Ireland.

(98.) *Islands*.—These are all of small size, and lie closely adjacent to the coast. On the east side are—*Dalkey Island* (on the south side of the entrance to Dublin Bay),—*Ireland's Eye*, a hill of pyramidal form (on the north side of the peninsula of Howth),—and *Lambay Island*, a few miles further to the northward.

On the north coast are,—*Rathlin Island* (7 miles long and $\frac{3}{4}$ broad), which consists of steep basaltic rocks,—*Inishtrahull*, a small islet to the north-east of Malin Head,—*Inch Island*, situated in Lough Swilly,—and *Tory Island*, off the north-west coast of Donegal.

On the west side are,—*Aran Island*, off the west coast of Donegal,—Eagle Island and several other small islets situated to the west of the peninsula of the Mullet,—*Achil Island* (about 95 square miles in area), covered with mountains, the highest of which rises to 2222 feet,—*Clare Island* and several others to the west of Clew Bay and along the adjacent shores of Galway,—and the group of the *Arran Islands* (consisting of three, of which the largest is about 19 square miles), at the entrance of Galway Bay.

Off the south-west coast is a group of 12 islets, called the *Blaskets*, to the west of Dunmore Head. Further south is *Valentia Island* (on the south side of the entrance of Dingle Bay), which has an area of 40 square miles; it is of moderate elevation, and is very fertile. *Cape Clear Island*, the most southern portion of Ireland, contains about 8 square miles: it is surrounded by high cliffs, and is generally barren.

(99.) *Rivers*.—The longest river of Ireland is the Shannon, which flows 224 miles from its source (in the county of Cavan, at a height of 345 feet above the sea) to the Atlantic Ocean, between Loop and Kerry Heads,—forming in the last 60 miles of its course a magnificent estuary, from 1 mile to 11 miles broad. It is navigable from the sea to Lough Allen, a distance of 213 miles, by the aid of some short artificial cuts, the principal of which is formed to avoid the rapids of Doonas, a few miles above Limerick. The fall of the Shannon, like that of the Spey, is greater in the lower than in the upper part of its course. It passes through three considerable lakes (Lough Allen, Lough Ree, and Lough Derg), and drains a surface of nearly 7000 square miles. Its most considerable tributary is the river Suck, which joins its right bank.

The other principal rivers of Ireland, proceeding in succession round the coast, are,—on the south, the *Bandon*, the *Lee* (60 miles), the *Blackwater* (90 miles), and the *Barrow* (114 miles), with its tributary the *Suir* (100 miles).

The Bandon is navigable to Innishannon, a distance of 13 miles. The Lee drains an area of nearly 600 square miles, and forms at its mouth the magnificent harbour of Cork, one of the finest in the world: it is not navigable above Cork. The Blackwater has a basin of 1165 square miles, and is navigable to Fermoy, 36 miles above its mouth.

The Barrow and the Suir, both of which rise in the Slieve Bloom Mountains, and unite to form the estuary of Waterford Harbour, drain a very extensive tract of country, comprehending above 3400 square miles. The river Nore, a considerable tributary of the Barrow, joins its right bank. The Barrow is navigable to Athy, 60 miles from the sea; the Suir to Clonmel, a distance of 40 miles; the Nore to Thomas Town, 28 miles above its junction with the Barrow.

On the east coast are, the *Slaney* (70 miles); the *Liffey* (75 miles); the *Boyne* (80 miles); and the *Lagan* (42 miles), flowing into Belfast Lough. The Slaney, which forms at its mouth the harbour of Wexford, is navigable to Enniscorthy (15 miles): the area of its basin exceeds 700 sq. miles. The Liffey has the metropolis, Dublin, at its mouth, but is not a navigable river. The Boyne, which drains about 1000 square miles, is navigable to Navan, 25 miles above its mouth.

On the north coast the two principal rivers are the *Bann* (from Lough Neagh); and the *Foyle*, which flows into Lough Foyle. The Bann is divided into the Upper and the Lower Bann; the Upper Bann is the portion above Lough Neagh, and has its source in the Mourne Mountains. The total length of the Bann is 100 miles, and the area of its basin above 2300 square miles: it is navigable to Coleraine, 5 miles above its mouth. The Foyle, 80 miles to its most distant source, is formed by the union of several streams, and drains an area of 1100 square miles: it is navigable to Strabane, 20 miles above its mouth.

(100.) *Lakes*.—*Lough Neagh*,* the largest lake in the British Islands, is 20 miles long and 10 in average breadth, and has an area exceeding 150 square miles. Its elevation above the sea-level is only 48 feet; its greatest depth is 102 feet,—its average depth, however, not more than from 40 to 50 feet. Its shores are low and flat. The waters of Lough Neagh are celebrated for their petrifying quality.

Lough Erne consists of two parts,—an Upper and a Lower Lake, which are connected by the winding channel of the river Erne: they are both (the Upper Lake especially) interspersed with numerous islands. Their total area is 57 square miles: the greatest depth of the Lower Lake is 226 feet, and its height above the sea-level 150 feet. From its western extremity, the river Erne flows into Donegal Bay.

Lough Allen (161 feet above the sea), *Lough Ree* (125 feet), and *Lough Derg* (110 feet), all belong to the course of the Shannon, and are long and narrow in shape. Lough Allen has an area of 14 square miles; Lough Ree of 41 square miles; and Lough Derg, of 46 square miles. The shores of Lough Ree are low and flat, but Lough Derg is bordered on the south by high mountains.

* Like the term 'loch' in Scotland, the word 'lough' in Ireland is applied both to inlets of the sea and to proper fresh-water lakes.

There is also another and smaller *Lough Derg* ($3\frac{1}{2}$ square miles), in the south of Donegal, which lies at an elevation of 467 feet. On a small island which it contains is a cave called St. Patrick's Purgatory, a noted place of pilgrimage to the Catholic population of Ireland.

Lough Mask, in the western part of Connaught, has an area of 35 square miles, and is at a height of 68 feet: it communicates by a subterranean channel with *Lough Corrib*, which lies at a lower level. *Lough Corrib* is divided into two parts by a narrow channel: its total area is 68 square miles. Its waters are discharged into Galway Bay by a stream at the mouth of which is the town of Galway.

The *Lakes of Killarney*, situated amongst the Mountains of Kerry, are three in number, an Upper, Middle, and Lower Lake, all connected with one another, and of which the latter expands to the largest size. Their total area is about 10 square miles. The greatest depth of the Lower Lake is 252 feet, and its height above the sea-level 68 feet. The Lakes of Killarney are celebrated for their picturesque beauty; on their west side the highest mountains in Ireland rise steeply from the edge of the water.

There are numerous other lakes in Ireland, of smaller size, which with those mentioned above are estimated to embrace a total area of 711 square miles.

(101.) *Minerals*.—*Coal* occurs in many parts of Ireland (in the counties of Kilkenny, Tipperary, Limerick, Cork, Kerry, Clare, Leitrim, Tyrone, and Antrim), but is generally of very inferior quality to that furnished by the coal-fields of Great Britain, and is comparatively little worked. A considerable portion of the coal raised is only used for the purpose of burning lime. The best for domestic purposes is found to the west of Lough Neagh, in the neighbourhood of Dungannon. Peat, however, is the fuel exclusively used by the labouring population, and the towns are chiefly supplied with coal from the ports of England and Scotland.

Iron ore also occurs in many places, especially in the coal district of Leitrim, lying round Lough Allen, but the scarcity of coal has caused its working to be almost wholly abandoned.

Mines of *copper* and *lead* are worked in the counties of Waterford, Cork, and Kerry, and copper also in Wicklow, but the produce is not considerable. The copper ore is sent to Swansea to be smelted. Small quantities both of gold and silver have also been found in the mountain region of Wicklow.

Granite is abundant in many parts of the country, and in the counties of Donegal and Galway excellent statuary marble is found. Limestone is generally abundant, and carboniferous limestone forms the principal rock in the level plain of the interior. On the southern and western borders of Lough Neagh is an extensive deposit of clay, which is found only at a few other places in Ireland, and in small quantities. Antimony, manganese, and fullers' earth, are also found in some places, and slate is quarried to a small extent, chiefly in the valley of the Blackwater, near Lismore.

Mineral springs occur at Mallow (in the county of Cork), the water of which is saline, and of a temperature 23° above that of the atmosphere;—at Castle Connell, near Limerick, of chalybeate quality;—and sulphureous waters at Swanlinbar, in the county of Cavan, and Lucan, near Dublin.

(102.) *Climate*.—The climate of Ireland differs chiefly from that of

England in its greater degree of moisture. About 31 inches of rain fall annually at Dublin, and 40 inches at Cork. The atmosphere is at all times largely impregnated with moisture, and the average number of days upon which rain falls, which amounts to 208 annually, is greater than in any other country in Europe. This results from the perfectly insular situation of the country, and the prevalence during three-fourths of the year of westerly winds, charged with the vapours of the Atlantic. The almost constant humidity of the air is the cause of the generally verdant aspect by which Ireland is distinguished; the trees hence remain longer in leaf than in England.

The western coasts of Ireland are warmer than similar latitudes in Great Britain, and the whole island has a more equable average temperature,—that is, its extremes of heat and cold are confined within narrower limits than in England or Scotland.

The plants and animals are generally the same as those which belong to Great Britain. There are some local peculiarities, but these are not of importance. The arbutus, a beautiful evergreen which flourishes in the neighbourhood of the Lakes of Killarney and the south-west coast, is not native to any other country in so high a latitude. The broad-leaved myrtle grows luxuriantly in the southern counties; but peaches, grapes, and other similar fruits, do not ripen without much care and attention.

Ireland was formerly thickly covered with forests, but the greater part of these have been cut down, and wood is now comparatively scarce. The remains of ancient vegetation are found in the extensive bogs, in which whole trunks of trees are frequently discovered.

There are no serpents in Ireland, and one species of lizard, with four of the order of frogs, newts, &c., constitute the only reptiles met with in this country, and even some of these are probably of recent introduction.

(103.) *Population*.—Ireland is thickly populated; in 1841, the number of its inhabitants amounted to 8,175,238, an average of more than 250 to the square mile; an astonishing proportion, considering the large extent of mountainous and unproductive land. Between that period and the present time the number has probably been materially diminished by the numerous deaths which occurred during the famine of 1846-8, and the large extent to which emigration (to the United States and elsewhere) has taken place.

Except in the mountainous districts, the population is pretty equally distributed throughout the island. It is most dense in the neighbourhood of Dublin and Cork, and next so in parts of the counties of Antrim, Down, Armagh, Monaghan, and Cavan, in which it averages upwards of 400 to the square mile. Along both banks of the Shannon, and in parts of Leitrim and Roscommon, the average is about 300 to the square mile.

The great majority of the people of Ireland belong to the Celtic race, though in the parts most adjacent to England, and in the large towns, they have become partially mixed with the descendants of English colonists. The English language is now generally prevalent, and the native Celtic dialect in gradual process of extinction, though still spoken by the peasantry in the south and west parts of the island.

In the eastern part of Ulster the population is almost wholly of Scotch origin, and the manners and character of the inhabitants of the lowlands of Scotland have been transplanted there accordingly. Colonists from

Scotland have at various times settled in different parts of Ireland, but the great colonization of Ulster by the Scotch took place in the reign of James I. The inhabitants of Ulster occupy a higher rank in the social scale than those of any other part of Ireland, and are generally a more frugal, industrious, and intelligent race.

(104.) *Industrial occupations: agriculture.*—Ireland is chiefly a grazing country, and large numbers of cattle of all kinds are reared, principally for export to England. Oxen are most extensively bred in the counties of Limerick, Tipperary, Roscommon, and Meath: the native cattle have been to a great extent superseded by the introduction of English breeds. Roscommon, Galway, Clare, Tipperary, and Limerick, are the chief counties for breeding sheep, but these are not so extensively reared as oxen: the native sheep is small and partially covered with hair, but it has been crossed with English breeds, and most of the Irish sheep are at present long-woolled and of large size. A breed of fine short-woolled sheep is peculiar to the mountains of Wicklow. Goats are very generally reared in the mountainous districts, and are kept chiefly for their milk. The hog, however, is the animal most universally found, and almost throughout the country shares the habitations of the peasantry, feeding chiefly on potatoes. Dairy-farms are numerous, and butter is made and exported in large quantities.

Next to the potatoe, which is everywhere the prevalent crop, oats are most generally cultivated. The humidity of the climate renders it less fitted for the growth of wheat and barley, both of which, however, are raised, and the cultivation of the former has extended of late years. The greater part of the grain raised in Ireland is not consumed in that country, but exported to England. Turnips are cultivated in many districts, and have of late become a very general crop.

Owing to the failure of the potatoe, the agricultural produce has of late years been insufficient for the support of the population, and large quantities of maize, and other corn, have been imported from abroad to supply the deficiency. Flax is grown to some extent throughout the province of Ulster, for the supply of the staple manufacture.

(105.) *Fisheries.*—The seas around Ireland swarm with fish, and the inlets on its shores are the resort of vast shoals of the cod, herring, ling, hake, mackarel, and many others. There are extensive oyster-beds on the coast of Clare, and also in Loughs Swilly and Carlingford. But this branch of industry is very imperfectly developed, and the Irish fisheries are not in a flourishing condition. Indeed their produce is quite inconsiderable compared with the abundant opportunities afforded by nature, and salt-fish is even imported from Scotland. Fresh-water fish likewise abound in the rivers, and there are salmon-fisheries in the Bann, the Foyle, the Erne, the Boyne, and other streams, some of the produce of which is sent to the markets of Liverpool, Bristol, and London.

(106.) *Manufactures.*—Ireland is not distinguished as a manufacturing country. The principal manufacture is that of *linen*, chiefly carried on in the province of Ulster, though latterly extended into Connaught and Munster. Belfast and Armagh, with their immediate neighbourhood, constitute its principal seat.

The *woollen* manufacture, chiefly confined to the coarser kinds of goods is carried on in various parts of Leinster, at Dublin, Kilkenny, Wick,

and elsewhere. The manufacture of broad-cloths has been introduced into Dublin, and that of fine stuffs at Bandon: a coarse kind of frieze is generally made by the farming population in most parts of the country during the intervals of agricultural labour, for their own use and the supply of the adjoining districts.

The manufacture of *cotton* goods is prosecuted to a considerable extent at Belfast and its vicinity, and also in some parts of the south of Ireland, at Tullamore (King's County), and elsewhere. The manufacture of tainet, or Irish poplin, a mixed fabric of silk and worsted, is almost peculiar to Dublin. Some manufacture of muslin and cambric is carried on at Dundalk.

The distillation of whiskey from malt is largely carried on, though not by any means to so great an extent as formerly, owing to the spread of more temperate habits among the population at large. Beer is largely made in Dublin, and exported both to Great Britain and to foreign countries. Other manufactures pursued to a less extent are those of muslin, leather, glass, and vitriol.

(107.) *Commerce*.—The foreign trade of Ireland is inconsiderable compared with that carried on across the Channel, with Great Britain. The *imports* from abroad consist chiefly of tea, coffee, tobacco, sugar, wine, timber, tallow, flax, hemp, and wool; with, of late years, maize or Indian corn, chiefly from the United States. Coal is largely imported from England and Scotland (Art. 86), and also cotton, woollen, and hardware goods, with other British manufactures.

The *exports* are chiefly to Great Britain, and consist principally of agricultural produce (including vast numbers of live cattle and pigs), with salt beef and pork, eggs, &c.; and also linen manufactures.

Dublin is the principal seat of the foreign import trade, and next in order are Belfast, Cork, and Waterford; but the export trade both of Belfast and Cork is more considerable than that of Dublin. Waterford is a great seat of the cross-channel trade to England, and exports immense quantities of live stock and agricultural produce,—consigned chiefly to Bristol. Both Drogheda and Dundalk have also considerable export trade of butter and other farm produce.

(108.) *Internal communication*.—The roads in Ireland are generally well laid out, and kept in good repair, unless in the remoter and more mountainous parts of the country.

Two principal *canals* (the Grand Canal and the Royal Canal) connect Dublin with the Shannon, crossing the great plain which occupies the interior of the country,—with branches to many of the principal towns adjacent to their course. These are chiefly used for the conveyance of agricultural produce to the Irish metropolis. There are also some other canals and artificial navigations, but this mode of communication is not, on the whole, so extensively used as might be expected. The Shannon is extensively traversed by steam-boats both for passengers and goods.

Several lines of *railway* have been constructed of late years, and others are in progress of formation. A short line between Dublin and Kingstown (on the south side of Dublin Bay, near its entrance,) was opened in 1834. A great trunk line (the Great Southern and Western) which extends from Dublin to Cork, and is crossed by a line partially formed between Waterford and Limerick, places the capital of the island in imme-

diate communication with all its south and south-western parts. Other lines extend from Dublin in a westerly direction towards the province of Connaught, and northward by Drogheda towards Belfast. But the railway system in Ireland is as yet far from being fully developed.

The voyage between Dublin and Holyhead (the nearest port on the British coast) is performed by swift steam-packets in less than four hours. From Holyhead to London the journey by railway (which is now open continuously throughout) occupies 8½ hours; so that, by the aid of steam, a communication is effected between the Irish metropolis and the capital of the British Empire (a distance of upwards of 330 miles, 70 of which are water,) in the almost incredibly short space of about 13 hours!

(109.) *National divisions*.—The thirty-two counties into which Ireland is divided are of very unequal dimensions. Cork, the largest, has an area of 2765 square miles,—Galway, the next in size, of 2360 square miles. The smallest is Louth, 322 square miles in extent.* The counties on the east side of the island are generally smaller than those on the west. The names of the four provinces, Ulster, Munster, Leinster, and Connaught, are now only used as geographical divisions, though they formerly marked the limits of separate kingdoms.

Thirty of the counties are subdivided into baronies, very unequal in extent; the county of Cavan into hundreds, and Cork into two ridings (east and west), which again are subdivided into hundreds. The parishes form both civil and ecclesiastical divisions, but their limits do not always coincide with those of the counties and baronies.

The ecclesiastical division is into two archiepiscopal provinces, those of Armagh and Dublin, and ten bishoprics,—five in each province.

(110.) *Towns, &c.*—Compared with the general density of its population, Ireland contains few large towns. Dublin, Cork, Belfast, and Limerick, are the only towns which have more than 50,000 inhabitants, and the only additional places of which the population exceeds 20,000 are Galway, Waterford, and Kilkenny. The greater number of the towns have only from three to four or five thousand inhabitants; the population is chiefly rural, and distributed in villages and small farm-holdings throughout the country.

The counties contained in each of the provinces are enumerated in the following pages, with the names of the principal towns, and their population in 1841. The county-towns are distinguished by italics.

* The town and territory of Drogheda, situate on the borders of Louth and Meath, also forms a county in itself, with an area of 9 square miles.

LEINSTER, TWELVE COUNTIES.

Counties.	Towns.
Dublin	<i>Dublin</i> , 238,000— <i>Kingstown</i> , 7200— <i>Balbriggan</i> , 2900.
Louth	<i>Drogheda</i> , 17,300— <i>Dundalk</i> , 10,800— <i>Carlingford</i> .
Meath	<i>Navan</i> , 8600— <i>Kells</i> , 4200— <i>Trim</i> , 2300.
Westmeath	<i>Athlone</i> , 6400— <i>Mullingar</i> , 4600.
Longford	<i>Longford</i> , 5000— <i>Edgeworthstown</i> , 860.
King's County	<i>Tullamore</i> , 6300— <i>Parsonstown</i> , 6300— <i>Philipstown</i> , 1500.
Queen's County	<i>Maryborough</i> , 3600— <i>Portarlinton</i> , 3100.
Kilkenny	<i>Kilkenny</i> , 25,700— <i>Castlemoyle</i> , 1700.
Carlow	<i>Carlow</i> , 10,400— <i>Tullow</i> , 3000.
Kildare	<i>Athy</i> , 4700— <i>Naas</i> , 3500— <i>Maynooth</i> , 2100— <i>Kildare</i> , 1600.
Wicklow	<i>Arklow</i> , 3200— <i>Wicklow</i> , 2800.
Wexford	<i>Wexford</i> , 11,200— <i>New Ross</i> , 7500— <i>Enniscorthy</i> , 7000.

(111.) *Dublin*, the capital of Ireland, situated on both sides of the mouth of the Liffey, is distinguished by the number and magnificence of its public buildings, and its numerous splendid residences, which entitle it to be regarded as one of the finest cities in Europe. It has two Protestant cathedral churches,—Christ Church (the more ancient), and St. Patrick's, distinguished for its numerous monuments. Besides many other churches belonging to the established religion, there are also several Roman Catholic places of worship, some of which are of large dimensions and great architectural beauty.

Dublin is the seat of a Protestant University, styled Trinity College, founded in the time of Queen Elizabeth. The public library belonging to this institution, which is the most considerable in Ireland, contains upwards of 104,000 volumes. There are, besides, academies and other institutions for the encouragement of science, literature, and the fine arts.

Dublin is not distinguished as a manufacturing city, but the amount of trade—both foreign and coasting—is very considerable, and the export trade is largely increasing (Arts. 106, 107). The mouth of the river Liffey is obstructed by sand-banks, so that large vessels are unable to reach the town; but an excellent harbour has been constructed at *Kings-town* (formerly called Dunleary), on the south side of Dublin Bay, 6 miles to the eastward. Kingstown now forms, in fact, the port of Dublin, and is the principal resort of its shipping.

Balbriggan, on the coast, 18 miles north of Dublin, is a small trading and fishing town; it is distinguished for its manufacture of hosiery.

Both *Drogheda* (at the mouth of the river Boyne), and *Dundalk* (at the head of the bay of that name), on the coast to the north of Dublin, have considerable trade in the export of corn, hides, butter, and all kinds of agricultural produce. Drogheda is one of the principal corn-markets of Ireland.—*Carlingford*, 10 miles to the eastward of Dundalk, is a small, fishing town, on the west shore of Carlingford Lough.

Drogheda, which was formerly called *Tredagh*, was early a place of historical importance. It was the first of the many towns which were besieged, and the inhabitants put to the sword, during the merciless campaign of Cromwell, in 1649–50. About 2 miles above Drogheda, on the banks of the Boyne, was fought the great battle between the armies of

William III. and James II., A. D. 1690. Dundalk is also of early origin, and is associated with many important occurrences in Irish history.

Navan (15 miles s. w. of Drogheda), and *Trim* (21 miles), are both inland towns situated on the Boyne, the former at the confluence of its tributary, the Blackwater: they lie in the midst of a rich agricultural district. Nine miles n. w. of Navan is the small town of *Kells*, on the Blackwater.—*Mullingar* (47 miles w. by n. of Dublin), in the centre of the great plain of the interior, and on the banks of the Royal Canal, has important cattle-fairs.—*Athlone*, built on both banks of the Shannon, about 3 miles below its exit from Lough Ree, is one of the principal inland towns of Ireland, and has considerable local trade. It is one of the chief government stations for troops and military stores.—*Longford* (22 miles north of Athlone and 70 north-westward from Dublin), on a small tributary of the Shannon, is also a military station.

Tullamore (52 miles to the west of Dublin) on the banks of the Grand Canal, and *Birr*, or *Parsonstown*, 21 miles to the s. w., are both thriving towns: Tullamore has some manufacture of cottons and linens.—*Portarlington* (41 miles s. w. of Dublin), is situated on the upper course of the river Barrow; *Maryborough*, 10 miles further to the s. w., is near the head of one of the small tributaries of that river.

Kilkenny, on the river Nore (64 miles s. w. of Dublin), is the largest inland town of Ireland, and the second place in population in the province of Leinster. It is a principal seat of the manufacture of woollen goods, and has considerable inland trade.—*Carlow*, also a thriving inland town, is situated on the east bank of the river Barrow; it possesses a fine Roman Catholic cathedral and college, and carries on considerable trade in agricultural produce.

Athy, on the Barrow (11 miles above Carlow), and *Naas*, near the Liffey (20 miles s. w. of Dublin), both possess considerable local trade; Athy has an important corn-market.—*Kildare*, a small place in the centre of the county, has in its neighbourhood an extensive tract of open common-land called the 'Curragh of Kildare,' which is distinguished for the richness of its verdure.—*Maynooth*, in the north-eastern part of the county (15 miles to the westward of Dublin), is the seat of a college for the education of students for the Roman Catholic priesthood.

The county of Wicklow, immediately to the south of Dublin, is distinguished chiefly for the beauty of its mountain scenery (Art. 97). The towns of *Wicklow* (near the mouth of the river Vartry, 26 miles s. s. e. of Dublin), and *Arklow*, at the mouth of the Ovoca, or Avoca (13 miles further to the south), are both unimportant places; the latter has some trade in malt and coal. The valley of the Avoca, which is formed by the union of the two streams of the Avonmore and Avonbeg, possesses great natural beauties; as also do the districts watered by the rivers Vartry and Dargle,—the latter a little stream near the northern border of the county. The whole region is rich in poetical associations, and contains many interesting remains of antiquity,—memorials of the early civilization of Ireland.

Wexford is a sea-port near the mouth of the river Slaney, where it enters the estuary of Wexford Haven: it has extensive quays, and possesses some trade.—*Enniscorthy*, at the head of the navigation of the Slaney, 15 miles above Wicklow, is a thriving inland town.—*New Ross*,

on the river Barrow, 15 miles above its mouth, has considerable export of agricultural produce, especially wool, and is a flourishing town.

ULSTER, NINE COUNTIES.

Counties.	Towns.
Antrim	Belfast, 75,000—Lisburn, 6200—Ballymena, 5500— <i>Carrickfergus</i> , 3800—Larne, 3300—Antrim, 2600—Ballycastle, 1700.
Down	Newry, 12,000—Newtown-Ards, 7600— <i>Downpatrick</i> , 4600—Banbridge, 3300—Donaghadee, 3100—Portaferry, 2000.
Armagh	<i>Armagh</i> , 10,300—Lurgan, 4600—Portadown, 2500.
Monaghan	<i>Monaghan</i> , 4100—Clones, 2800.
Cavan	<i>Cavan</i> , 3700—Cootehill, 2400.
Fermanagh	<i>Enniskillen</i> , 5600.
Tyrone	Strabane, 5400—Dungannon, 3800— <i>Omagh</i> , 2900.
Londonderry . . .	<i>Londonderry</i> , 15,000—Coleraine, 6200—Newtown-Limavady, 3100.
Donegal	<i>Liford</i> , 5400—Ballyshannon, 3500.

(112.) *Belfast*, situated on the river Lagan, and at the head of Belfast Lough, is the largest town in the province of Ulster. It is the third city in Ireland in size and wealth, and is rapidly advancing in commercial importance. It is a great seat both of the linen and cotton manufactures, and there are also factories of glass and vitriol, potteries, sugar-refineries, breweries, and distilleries. Belfast has considerable foreign trade, as well as extensive intercourse with the ports of the Scotch and English coast, especially with Liverpool, to which it sends great quantities of cattle and agricultural produce. By the aid of a canal, this town has a navigable communication with Lough Neagh. Belfast contains an important collegiate establishment, entitled the Belfast Academical Institution, and is also the seat of one of the newly-established Queen's Colleges.

Carrickfergus, 10 miles N.E. of Belfast, is a small sea-port on the north side of Belfast Lough.—The town of *Larne*, 9 miles further to the northward, lies at the entrance of the smaller and land-locked estuary of Lough Larne.—*Ballycastle*, on the north coast of Antrim, to the westward of Fair Head, has valuable coal-mines in its neighbourhood, which are worked to a limited extent.—The towns of *Antrim* (situated near the north-east corner of Lough Neagh), and *Ballymena* (near the little river Main, which flows into the north side of Lough Neagh), both have extensive linen-works in their immediate vicinity; Ballymena possesses considerable trade in linens and in agricultural produce.—*Lisburn*, 8 miles S.W. of Belfast, is a thriving inland town, situated on the Lagan.

Downpatrick, near the S.W. extremity of Strangford Lough, is a very ancient town, with a great trade in linens and agricultural produce.—*Donaghadee*, in the N.E. corner of Down, is a station for packets in connection with Port Patrick, on the opposite coast of Scotland (Art. 93).—*Banbridge*, on the upper Bann, is a considerable seat of the linen manufacture.—*Newry*, 6 miles above the head of Carlingford Lough, is a flourishing port; it possesses both linen and cotton works, and has con-

siderable export trade. By the aid of an artificial navigation, Carlingford Lough is connected with the river Bann, and by its means with Lough Neagh.

Armagh (34 miles s. w. of Belfast and 71 to the northward of Dublin), an ancient city situated in the midst of the plain which extends to the south of Lough Neagh, is the ecclesiastical metropolis of Ireland. It contains both a Protestant and Roman Catholic cathedral, the former of which is of great antiquity. Armagh has considerable local trade in the supply of a populous surrounding district, and is a great market for agricultural produce: linen-works are numerous in its vicinity, and also in the neighbourhood of *Portadown* and *Lurgan*, both of them situated in the N. E. portion of the county.

Monaghan and *Clones*, small inland towns in the county of Monaghan, with *Cootehill*, in the adjacent county of Cavan, possess some portion of the linen trade. The town of *Cavan* has only local traffic.—*Enniskillen* is a thriving town situated on an island in the stream which connects the upper and lower portions of Lough Erne: it has considerable trade in corn and various articles for the supply of the adjacent district.

Omagh, in the centre of the county of Tyrone, and *Dungannon*, a short distance to the s. w. of Lough Neagh, both share in the linen trade. At the latter place are some manufactures of earthenware and pottery, besides iron-works, and coal is worked in the neighbourhood (Art. 101).—*Strabane*, in the northern part of the county (at the junction of the river Mourne with the Foyle), is a thriving town, with considerable local trade.—On the opposite bank of the Foyle is *Lifford*, the principal place in the county of Donegal.—*Ballyshannon*, in the southern part of the same county, is a small sea-port and fishing town at the mouth of the river Erne, on the coast of Donegal Bay.

Londonderry, or *Derry* (120 miles to the N. W. of Dublin), situated on both banks of the river Foyle, near its mouth, is a place of considerable commercial importance. It has some foreign trade, and also great intercourse with Scotland and Liverpool, chiefly by steamboats. Londonderry is, next to Belfast, the most considerable town in Ulster; it was a place of early historical importance, and is memorable for the heroic defence made by its inhabitants against the arms of James II., during a protracted siege, A. D. 1689.

Coleraine, 5 miles above the mouth of the Bann, is a place of some trade, both foreign and cross-channel; the linen manufacture is carried on here, as well as a considerable salmon-fishery. The greater part of its maritime traffic is conducted by the harbour of Port Rush, a few miles to the eastward of the mouth of the river.

CONNAUGHT, FIVE COUNTIES.

Counties.	Towns.
Leitrim	<i>Carrick-on-Shannon</i> , 1900.
Roscommon	<i>Roscommon</i> , 3400— <i>Boyle</i> , 3200— <i>Elphin</i> , 1500.
Sligo	<i>Sligo</i> , 12,000.
Mayo	<i>Ballina</i> , 7000— <i>Castlebar</i> , 5000— <i>Westport</i> , 4300— <i>Killala</i> , 1400.
Galway	<i>Galway</i> , 17,000— <i>Tuam</i> , 6000— <i>Loughrea</i> , 5400— <i>Clifden</i> , 1500.

(113.) *Carrick-on-Shannon* (8 miles below the exit of that river from Lough Allen), and *Roscommon* (5 miles to the westward of Lough Ree), are small inland towns, only of local importance.—*Elphin*, 15 miles to the north of the latter, is a very ancient ecclesiastical town, now decayed.—*Boyle* (in the north part of Roscommon), on the banks of a river of the same name, which joins the Shannon, has a large market for corn and butter, and great local trade.

Sligo is a considerable sea-port at the mouth of the river Garrow, which flows from Lough Gill into Sligo Bay.—*Ballina*, on the banks of the river Moy, 7 miles above its entrance into Killala Bay, has a brisk trade in the export of agricultural produce, and valuable salmon-fisheries.—*Castlebar*, on the banks of a stream which communicates with Lough Conn, is a small inland town, with some trade in linens. Ten miles to the s.w. is *Westport*, a thriving sea-port at the head of Clew Bay.

Galway, the largest town in the province of Connaught, is situated near the head of Galway Bay, at the mouth of the river which flows from Lough Corrib. It has some export trade, and is about to be made a station for the departure of packets to America, for which its position is well suited. A considerable fishery is carried on, though not to the extent of its natural capabilities. Galway is the seat of one of the newly-established Queen's Colleges.—*Tuam* (18 miles to the n. n. e. of Galway) is a small inland town, formerly the seat of a Protestant archbishopric.—*Loughrea*, to the s. e. of Galway, is on the banks of the small lake from which it derives its name; it has an extensive market for agricultural produce. Thirteen miles n. e. of Loughrea, and thirty-one to the eastward of Galway (near the right bank of the river Suck), is the village of *Aughrim* or Aghrim, the scene of a decisive victory gained by the troops of William III. over those of James II., in 1691.

The tract of country lying between Galway and Clew Bays, embracing the western portion of the county of Galway and the adjacent part of Mayo, is a wild and mountainous district, which, besides exhibiting much beauty and variety of scenery, possesses great natural capabilities in its abundance of mineral wealth and the numerous good harbours formed by the inlets upon its western shores. The greater part of this district is comprehended under the names of Connemara and Joyce's Country (Art. 97).—*Clifden* is a small sea-port situated at one of the inlets on the coast of the former.

MUNSTER, SIX COUNTIES.

Counties.	Towns.
Clare	<i>Ennis</i> , 9300— <i>Kilrush</i> , 8000— <i>Killaloe</i> , 2700.
Limerick	<i>Limerick</i> , 65,000— <i>Askeaton</i> , 4400— <i>Rathkeale</i> , 4300.
Tipperary	<i>Clonmel</i> , 13,500— <i>Nenagh</i> , 8600— <i>Carrick-on-Suir</i> , 8300— <i>Thurles</i> , 7500— <i>Tipperary</i> , 7300— <i>Cashel</i> , 7000— <i>Cahir</i> , 3600.
Waterford	<i>Waterford</i> , 23,000— <i>Dungarvan</i> , 8600— <i>Liamore</i> , 3900— <i>Tallow</i> , 2900.
Cork	<i>Cork</i> , 106,000— <i>Youghal</i> , 9900— <i>Bandon</i> , 9000— <i>Kinsale</i> , 6900— <i>Mallow</i> , 6800— <i>Fermoy</i> , 6300— <i>Queenstown</i> , 6000— <i>Macroom</i> , 4800— <i>Skibbereen</i> , 4700— <i>Charleville</i> , 4200— <i>Bantry</i> , 4000— <i>Baltimore</i> .
Kerry	<i>Tralee</i> , 11,300— <i>Killarney</i> , 7000— <i>Dingle</i> , 3300— <i>Cahiriveen</i> , 1400.

(114.) The town of *Ennis* is situated on the west bank of the river *Fergus*, which joins the *Shannon* about 18 miles below *Limerick*; fine black marble is found in its neighbourhood. The *Fergus* is navigable below the village of *Clare* (3 miles to the south of *Ennis*), between which place and its junction with the *Shannon* it forms a broad estuary, interspersed with numerous islands.—*Kilrush* is a small trading and fishing town on the north bank of the *Shannon*, about midway between the junction of the *Fergus* and its entrance into the sea.—*Killaloe*, an episcopal town, is situated on the *Shannon*, immediately below its exit from *Lough Derg*.

Limerick, situated on the *Shannon*, at the commencement of the estuary of that river, is fourth in population of the cities of Ireland. It is a place of great antiquity, and contains a venerable cathedral. *Limerick* stands partly on an island, and partly on the opposite banks of the river. It has considerable manufactures, of linen, woollen, cotton, paper, and many other articles, and is a great place of trade, both foreign and coasting. Vessels of 400 tons burden can ride in safety at the quay, and the navigation thence to the mouth of the *Shannon* is unobstructed and secure. *Limerick* has shared in most of the great historical occurrences of the country, and has always been the chief stronghold of the Roman Catholics of Ireland. It sustained two memorable sieges in 1690–1, in defence of the cause of *James II.*, the latter of which resulted in its surrender on terms highly favourable to the besieged.

Clonmel is an ancient town situated chiefly on the north bank of the river *Suir*, the navigation of which commences here: it has great trade in corn, bacon, butter, and agricultural produce in general, and serves as the outlet for a large inland district.—Thirteen miles lower down the river, and also on its northern bank, is *Carrick-on-Suir*, formerly a considerable seat of the woollen manufacture, but now much declined: the *Suir* is navigable for large vessels up to this town.—*Cahir* is a small town on the east bank of the *Suir*, 18 miles above *Clonmel*.—*Cashel*, an ancient ecclesiastical city, is situated in the central part of *Tipperary*, about 2 miles to the eastward of the *Suir*, in the midst of a fine plain. The city is built round the slopes of a remarkable eminence, called the *Rock of Cashel*, on the summit of which are the remains of a cathedral of great antiquity.—The towns of *Nenagh*, *Thurles*, and *Tipperary*, all

possess considerable local traffic; Thurles is rendered important by its situation on the line of the Great Southern and Western Railway (Art. 108).

Waterford (82 miles s. s. w. of Dublin) is a large town on the south bank of the Suir, about 9 miles above its entrance into the capacious estuary of Waterford Harbour. It is a place of great foreign and coasting trade (Art. 107): vessels of 500 tons burden can lie in safety at the quay.

Dungarvan, on an inlet of the coast, 26 miles to the s. w. of Waterford, is a thriving sea-port, with considerable export trade.—*Lismore* is an inland town on the Blackwater, about 20 miles above its mouth.—*Tallow*, 4 miles to the s. w., is a small town on the river Bride, a tributary of the Blackwater.

Cork, an episcopal city of ancient origin, is situated on the river Lee, at a distance of 136 miles s. w. from Dublin in a straight line, and 165 by railway. It is the second city of the island in size and populousness, and is only inferior to Belfast in the amount of its foreign trade. Provisions and other agricultural produce are largely exported; and coarse linen and woollen goods, with paper, leather, and glass, are manufactured: ship-building is also extensively carried on, and many large steamers are constructed. Cork is the seat of one of the Queen's Colleges, and contains several literary and scientific institutions. Below Cork, the Lee expands into a considerable estuary, which forms one of the finest harbours in the world. On an island situated within this harbour is *Queenstown*,—until lately called the Cove of Cork, but which received its present name on occasion of Her Majesty's visit to Ireland, in 1849. Queenstown forms the principal port of Cork, as only the smaller vessels are able to reach that city.

Upon the south coast of the extensive county of Cork are several small sea-port towns, the two principal of which are *Youghal* (26 miles east of Cork, at the mouth of the Blackwater), and *Kinsale*, near the mouth of the river Bandon, 13 miles to the south of Cork. Youghal has considerable export of grain; Kinsale is largely engaged in the fisheries.—*Bandon*, on the river of that name, 14 miles above Kinsale, has some manufactures of woollens, but is not so important in this respect as formerly.—*Fermoy* and *Mallow* are small inland towns on the Blackwater, the former to the n. w. of Cork and on the line of the Great Southern and Western Railway, the latter 17 miles lower down the river.

Tralee, near the west coast of Kerry, is situated on a little river which falls into Tralee Bay.—*Dingle* is a small sea-port on the north side of the extensive inlet of Dingle Bay. Upon an inlet called Valentia River, near the south side of the entrance to the same estuary, is the town of *Cahir-civeen*, which possesses some import trade: its harbour is on the coast of Valentia Island, 3 miles further to the west (Art. 98).—*Killarney*, a small inland town near the foot of the lakes of that name, is much resorted to by tourists on account of the beautiful scenery in its neighbourhood (Art. 100). The lower lake of Killarney is also called Lough Leane, and the middle lake is distinguished as Mucross or Torc Lake. The town possesses some local trade.

(115.) The principal ecclesiastical cities in Ireland are Armagh and Dublin, each of which is the seat of an archbishop's see: Cashel and Tuam, which were formerly archiepiscopal cities, are now reduced to the rank of subordinate dioceses. Many of the places which were formerly the seats of episcopal sees are now unimportant villages, and in most cases several of them have been merged together and formed into an united diocese.

The present dioceses are as follow: in the province of Armagh,—*Armagh and Clogher* (united); *Meath*; *Derry and Raphoe* (united); *Down, Connor, and Dromore* (united); *Kilmore, Ardagh, and Elphin* (united); *Tuam, Killala, and Achonry* (united).

In the province of Dublin,—*Dublin, Glendagh, and Kildare* (united); *Ossory, Leighlin, and Ferns* (united); *Cashel, Emly, Waterford, and Lismore* (united); *Cloyne, Cork, and Ross* (united); *Killaloe, Kilfenora, Clonfert, and Kilmacduagh* (united); and *Limerick, Ardferf, and Aghadoe* (united).

Almost every part of Ireland abounds in remains of churches and other ecclesiastical edifices,—memorials of the primitive ages of Christianity in this island, and monuments of its early civilization. Besides these are numerous Round Towers, which are tall circular buildings, of taper dimensions, rising to upwards of 100 feet in height, and which are probably the remains of Pagan antiquity. The greater number of them are in ruins, though a few are still nearly perfect in external shape: altogether, the sites of 118 of these buildings have been discovered, of the great majority of which, however, only the foundations now remain. There are also in various parts of the country many cromlechs, circles of stones, barrows, cairns, sacred hills, and other remains of early antiquity, most of them indicative of the forms of primeval worship which prevailed among its inhabitants.

FORM OF GOVERNMENT, &c.

(116.) The British Islands constitute together the United Kingdom of Great Britain and Ireland, the form of government in which is a limited monarchy. The succession to the throne is hereditary. The legislative power is shared between the Sovereign and two Houses of Parliament,—the House of Lords, consisting of peers, whose title is hereditary, and the number of whom can be added to by the Crown,—and the House of Commons, consisting of delegates elected by certain classes of the population at large.

The House of Lords is composed both of spiritual and temporal peers. The Spiritual Peers are the two Archbishops and 25 of the Bishops of the English Church, and one Archbishop and three Bishops of the Church of Ireland. The temporal Peers embrace all adult members of the peerage of England and Wales, with 16 representatives of the peerage of Scotland, and 27 of those of Ireland. The representative peers of Scotland are elected for each parliament,—the Irish peers for life.

The House of Commons consists of 658 members, 500 of whom are returned as representatives of the various counties and boroughs in England and Wales, 53 from Scotland, and 105 from Ireland.

The House of Commons regulates the supplies of money for the public expenditure of the kingdom, and bills affecting money can only originate in that house; but all new laws, or public measures of any kind, require the united consent of the two Houses of Parliament and the Sovereign.

The executive power is vested in the Crown, and is carried on by ministers and officers appointed by the Sovereign.

For the administration of justice, England and Wales are divided into seven circuits, each of which is visited twice a year by two of the judges of the superior law courts. These are the Home Circuit, the Norfolk Circuit, the Oxford Circuit, the Midland Circuit, the Western Circuit, the Northern Circuit, and the Chester and Wales Circuit. The county of Middlesex, which is the seat of the supreme law courts, is not included in any of the circuits. In each county, the town in which the assizes (or periodical sittings of the courts) are held is regarded as the county-town.

The judicial administration of Scotland is distinct from that of England and Wales. Ireland is divided into six circuits, which are periodically visited by the judges.

(117.) The established religion in England and Wales is the Protestant, and the English church is under the government of two archbishops and 26 bishops. The names of the episcopal sees have been already mentioned (Art. 64).

In Scotland, the established form of worship is the Presbyterian, and the ministers of the church are under the jurisdiction of a body called the General Assembly.

In Ireland the established church is a branch of the English church (forming, with it, the United Church of England and Ireland), and is governed by two archbishops and 10 bishops. But the great majority of the people of Ireland are members of the Roman Catholic persuasion.

In all parts of the British Islands, full toleration is allowed to those who dissent from the established form of worship.

(118.) In regard to *education*, the condition of the great mass of the people of Great Britain and Ireland is less advanced than in some other countries. The proportion which the number of children actually at school bears to the entire population is smaller in England than in Prussia, Bavaria, Holland, and the United States. But great improvement both in the extent and quality of primary instruction has taken place of late years, and extensive assistance is now afforded by the Government to schools in connection with each of the two great Educational Societies—the National Society, which represents the Established church, and has under its direction by far the larger number of schools,—and the British and Foreign School Society, which is chiefly supported by the dissenting classes. The chief establishments for the pursuit of the higher branches of education have been already mentioned.

Scotland occupies a higher position than England both in regard to elementary instruction and to the superior branches of education. An extensive system of instruction, through the agency of parochial schools, partly under the direction of the clergy, is carried out throughout the whole country, and has resulted in a very general diffusion of moral and religious training among the great mass of the population.

In Ireland, elementary instruction is promoted by a numerous body of schools placed under the direction of a Board of National Education, and assisted with funds by the Government. The three Queen's Colleges of Belfast, Cork, and Galway, recently established for the purpose of affording secular education (without reference to differences of religious belief) to the middle and upper classes, together constitute the Queen's University, the Chancellor and Senate of which possess the usual power of granting degrees.

(119.) Great Britain is distinguished rather as a naval than a military power, but maintains nevertheless a numerous standing army, amounting at present to about 109,000 men, exclusive of the troops in the employ of the East India Company. The Royal Navy of Great Britain is superior to that of any country on the globe, and embraces about 420 ships of all classes, of which upwards of 100 are steam-vessels. This is altogether independent of the Commercial Navy, to the greatness of which reference has been already made (Art. 52). The great increase in the steam navy of Britain of late years, both in regard to war-steamers and those employed for commercial purposes, forms one of the most characteristic features in the industrial progress of the empire.

(120.) *Colonies.*—The British Empire includes a vast number of foreign and colonial possessions, embracing territories situated in every quarter of the globe: a view of the extent and population of these is exhibited in the following Table.

Table showing the Extent and Population of the British Dominions in various parts of the Globe.

	Area in Eng. sq. miles.	Population.
IN EUROPE.		
British Islands (including I. of Man and Channel Is.,)	120,189	27,000,000
Helligoland	5	2,300
Gibraltar	3	11,500
Malta and Goso	122	119,000
Ionian Islands	1,097	220,000
IN ASIA.		
British India (including Sind, the Punjaub, and Ceylon, with Assam, Aracan, the Tenasserim Provinces, Penang, Malacca, and Singapore)	725,000	93,500,000
Dependent states of India, under British protection	490,000	47,000,000
Aden	9	22,000
Hong-Kong	30	
Labuan	26	
IN AFRICA.		
Western Africa (including the Gambia, Sierra Leone, } and settlements on the Gold Coast)	232	64,500
Cape Colony (Cape of Good Hope)	178,000	180,000
Port Natal	18,000	
Ascension	34	
St. Helena	75	5,000
Mauritius, with Roderigue, Seychelle Islands, and other dependencies	1,020	182,500
IN AMERICA.		
Canada	350,000	1,485,000
New Brunswick	27,700	156,000
Nova Scotia	15,615	
Cape Breton Island	3,125	179,000
Prince Edward's Island	2,130	47,000
Newfoundland	36,000	75,000
Hudson's Bay Territory, and Labrador	2,700,000	500,000
Vancouver Island	14,000	20,000
West Indies (including British Guiana and Honduras)	177,365	891,400
Bermuda Islands	23	10,000
Falkland Islands	2,400	17,000
IN AUSTRALASIA.		
New South Wales (settled portions of)	53,100	180,000
Victoria, or Port Philip	80,000	60,800
South Australia	300,000	54,000
Western Australia (settled portions of)	40,000	4,500
Unexplored and unoccupied regions of Australia	2,400,000	
Tasmania, or Van Dieman's Land	24,000	58,900
New Zealand	99,500	120,000
Norfolk Island	13	
Auckland Islands	187	
SUMMARY, IN ROUND NUMBERS.		
British Islands	120,000	27,000,000
Colonies and Dependencies in Europe	1,200	353,000
Do. do. Asia	1,200,000	140,000,000
Do. do. Africa	197,000	432,000
Do. do. America	3,328,000	3,400,000
Do. do. Australasia	3,123,600	477,000
Total BRITISH EMPIRE	7,970,000	171,662,000

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A D D E N D A.

Islands (of England). To Art. 32, add the following :

On the west side of Morecambe Bay, and adjacent to the peninsula of Furness, are several small islands ; the largest of these is *Walney Island*, which is long and narrow in shape, and measures 8 miles from north to south, with an average breadth of less than half a mile. *Walney Island* consists of moss or peat ; it is low, and is at times nearly inundated by the tide : the smaller islets are *Old Barrow Island*, *Peel Island*, *Foulney Island*, and a few others, all of which lie intermediate between the island of *Walney* and the mainland.

To Art. 34, add :

Off the south-east coast of Hampshire, and opposite to the eastern extremity of the Isle of Wight, is the island of *Portsea*, which is only divided from the mainland by a narrow creek. *Portsea Island* includes an area of about 8 square miles ; at its south-west corner is the town of *Portsmouth*, and the extensive arm of the sea on its western side forms *Portsmouth Harbour* (Art. 61). The coast to the eastward of *Portsea Island* forms a small bay, in which are situated *Hayling Island* and *Thorney Island*. The arm of the sea between the islands of *Portsea* and *Hayling* is called *Langston Harbour*.

Page 62. To the list of towns in Sussex, add *Arundel* (pop. 2600), situated on the river Arun.

Page 114. To the list of towns in Donegal, add *Letterkenny* (pop. 2100), near the head of *Lough Swilly*.

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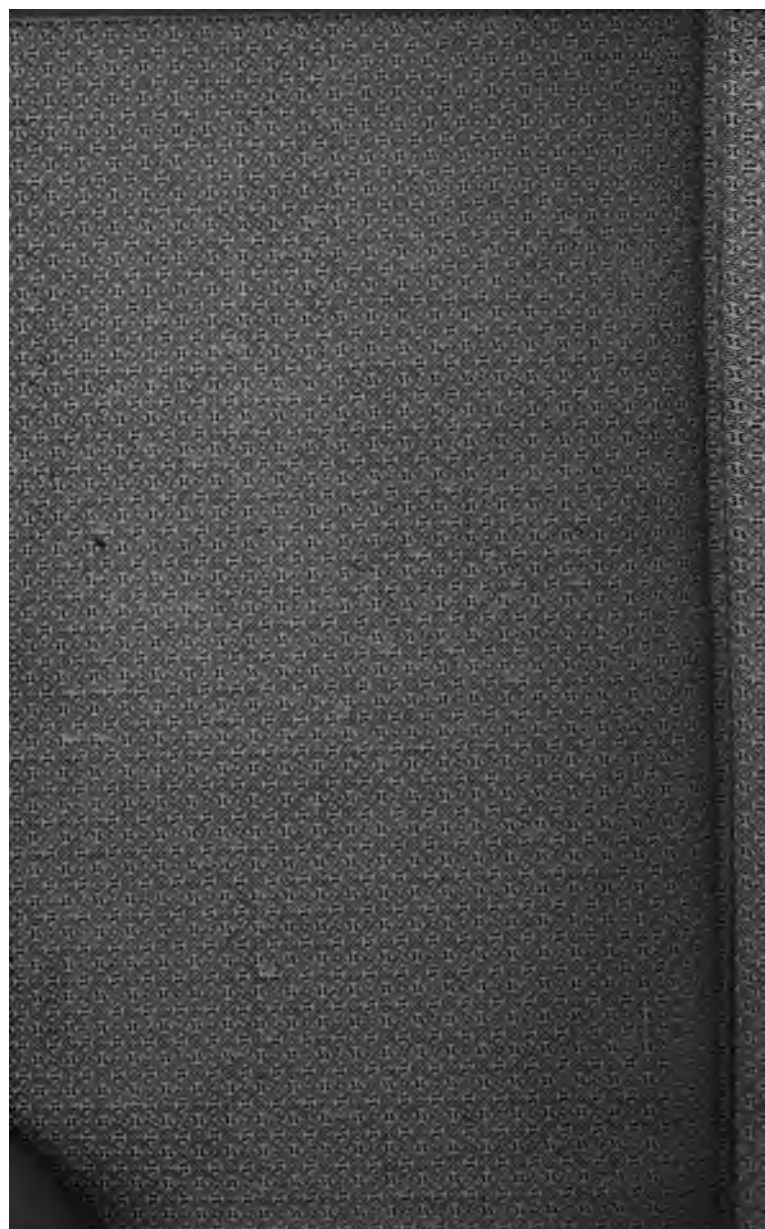
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